E.H.B.

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THE INDIAN LANCET.

A Weekly Journal of Medicine, Surgery, Public Health and of General Medical Intelligence.

Edited by RUDOLPH MONNIER M.B., M.S., Edin.

Vol. XXXI.] CALCUTTA, MONDAY, JANUARY 27th, 1908. [No. 4

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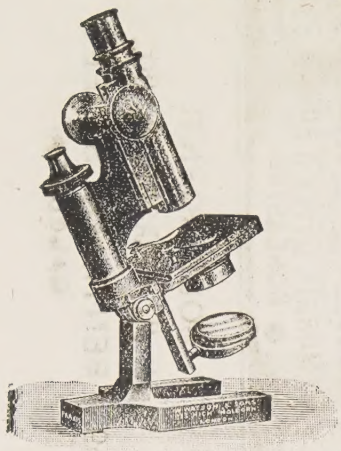

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ON THE NECESSITY OF CAUTION IN DIAGNOSING HYSTERIA.

By BERNARD MYERS, M. D., CM. MRCS

It is a matter of comparatively frequent occurrence in the experience of every medical man, for apparently obscure cases, which ultimately turn out to be hysteria, pure and simple, to demand attention, but it is also a matter of occasional experience for him to come across cases which, though looking definitely like hysteria, are found to be a masked disease obscured by hysterical symptoms. These latter cases need infinite care in diagnosis, as otherwise they tend to bring discredit upon our profession and ourselves. The following case will, I believe, prove of great interest, as, although seen by nine medical men, the correct diagnosis was not arrived at by anyone, although several opinions were not very wide of the mark.

The patient, a single lady, aged 31 years, was suddenly taken ill during the present summer, suffering from a rigor and a temperature of 105·2, and some obscure pains in the abdomen. She had not, we were told, been feeling particularly well for several weeks, but there was no ascertainable cause for the sudden rigor. The patient had never been considered "strong," and had had her left hip in instruments for several years when a child; she had also suffered much from rheumatism and anæmia. After the rigor the patient was ill for five weeks altogether, and during the whole of that period had suffered from constipation, the bowels never acting without an aperient or enema. The constipation became more obstinate in the fourth and fifth weeks of her illness, and for the last eleven days, it was particularly absolute although flatus continued to be passed, especially after an enema. Very slight discomfort was ever caused to the patient by the enema, and she experienced great relief after the passage of flatus.

The temperature, after the rigor, soon went down to the normal, and then varied between 100° F. and 97° F. for the rest of her illness, the temperature being generally just under 99° F. It always went down a little after an action of the bowels.

The abdomen always remained very slightly distended and tympanitic, and she complained of a feeling of pressure there but, although there was a general feeling of tenderness, it was impossible to absolutely locate any point as very tender or painful. On one occasion, however, I thought I elicited a definitely painful area over the sigmoid, but only to subsequently find it absent. Every part of the abdomen, when first touched, was said to be painful, but, after conversing with the patient a short time, the pain was generally declared to be absent on further palpation. On the last two days of her illness the transverse colon stood out occasionally, and peristaltic movement was also observed.

Vomiting continued on and off for the five weeks, but there were sometimes days in which it ceased. As a rule, she was sick twice or thrice in the 24 hours. The first vomited matter consisted of the contents of the stomach, and was followed by a thin bile-stained vomit. There was never, so far as I am aware, any stercoraceous odour in the breath or vomited material. Towards the end, the vomit was almost clear and watery looking, but had a deposit of that brown material which is often seen at the bottom of a cup of beef-tea.

The pulse was, in the early part of her illness, about 90 per minute, but it afterwards went to over 100, and became more feeble, ultimately being only just perceptible.

There was throughout no trouble with the urine, which upon analysis was normal.

She was fed by rectal enules of meat and milk, and also a little food was given by the mouth when her stomach was able to tolerate it. Still, when nothing else was retained by stomach cold water was practically always retained.

I may mention that she did not become materially thinner until the last week or so of her illness, and also that nothing definite was ever felt abdominally. She was given carminatives and fomentations, and also, when necessary, morphia, the last-mentioned being especially useful at night time.

Having now enumerated all the chief details of the case, I think that it will prove interesting to note the opinions of the nine medical men in the order of their seeing the case.

I. General practitioner. Ptomaine poisoning, neurosis?, some obscure abdominal condition.

II. General practitioner. Same as I.

III. General practitioner. Probably some intestinal ulcer, neurosis.

IV. General practitioner. Colitis and neurosis.

V. Consulting physician. Ptomaine poisoning, neurosis. He looked upon the temperature chart as typical of ptomaine poisoning.

VI. Consulting surgeon. Hysteria. Found two small abdominal glands, which were slightly palpable per rectum, and probably tubercular, but glands said to have nothing to do with present illness. He thought the temperature would do typically for tubercular peritonitis.

VII. Consulting surgeon. Hysteria. The temperature said to be typically hysterical.

VIII. Consulting physician. Partial obstruction of the bowels, hysteria?, also Addison's disease.

IX. Consulting surgeon. Partial obstruction of the bowels, probably, near sigmoid flexure, in a hysterical subject.

After the patient's illness had lasted five weeks, an abdominal section was done by Mr. H. J. Waring, M.S., F.R.C.S., in order to ascertain the cause of the partial obstruction, and to do what was necessary for the cure of the condition. He has kindly allowed me to insert his report as follows:—

"A growth was situated in the sigmoid flexure of the colon, immediately above the brim of the pelvis, in the left side. About two-thirds of an inch of the long axis of the bowel and the entire circumference, was the seat of a hard growth, which was annular in form, and so narrowed the lumen that only the tip of the finger could be passed into it. There were several adhesions between the colon and the upper aspect of the left ovary, whilst a segment of the lower part of the ileum was attached to the colon and involved in the adhesions. The ileum was detached from the adhesions and the growth in the colon, and a hole, two-thirds of an inch long, closed by the sutures The annular growth was incised, and end to end anastomosis performed. The growth of the colon histologically was found to be a typical columnar-celled carcinoma." The patient died shortly after the operation was finished. It will possibly be wondered at that not one of the nine opinions suggested carcinoma, but in a young lady of 31 years, who barring the last few weeks of her illness, had not been getting thinner, and in whom no growth, or glands, was palpable, the error is, I think, a very excusable one, more particularly as the insufficient nourishment would account for the little loss of weight. It is true that one surgeon felt some glands in the abdomen four days before her death, but which he believed to be tubercular and quite unconnected with her illness. I made a rectal examination ten days before death, and left no glands there, but the day before operation I distinctly felt two very small gland-like bodies upon the sacrum. On this day also, for the first time, the colon stood out and persistaltic action was seen. Early on this same day, whan giving the patient an enema, I found that the fluid instead of going in freely as usual, was returned after about fifteen ounces had entered the bowel, and no alteration in the position of the soft rubber tube made any difference. Thus it will be seen that the symptoms and signs had suddenly become much more pronounced the day before death, and consequently physician and surgeon who saw her on that day were at a distinct advantage over the others. In fact so changed had the patient suddenly become that she looked to be dying. She had certainly not previously to this illness, shown hysterical symptoms and the hysteria was, I presume, due to the condition of the left ovary, found by Mr. Waring at the operation. It certainly appeared peculiar that, four days before death, when the patient was told by two surgeons separately that she could help her symptoms, and must keep down her food, she managed to resist the desire to vomit almost entirely for nearly 36 hours. Again, the fact that the seat of pain in the abdomen was continually shifting was suggestive, although, when examined during the last few days per rectum, she complained of intense pain when the finger was pushed up towards the sigmoid flexuure.

The cause of the initial rigor seems difficult to explain unless it was due to some toxic condition of the bowel (she certainly had not eaten any food which could have caused ptomaine poisoning). or local inflammation; but the difficulty of explaining a temperature chart is seen by three distinct opinions being given by three of tha specialists in regard to it, namely:—

(1) That it was typical of ptomaine poisoning;

(2) That it was typical of hysteria;

(3) That it would do for a typical chart of tubercular peritonitis.

It will be noted that all nine opinions contained the word neurosis or hysteria, and hence there can be no doubt about the predominating presence of the hysterical symptoms, but still the majority of the opinions were for something more than hysteria, and the fact that ultimately neither calomel, castor oil, nor apenta water had the remotest effect, made it quite evident that there must be some obstruction, although of a partial nature as evidenced by the passage of flatus. Then again, as she was fed almost entirely per rectum, there was practically no appreciable increase in the size of the abdomen before the last few days, and then it was by no means considerable; but when the transverse colon stood out and peristalsis was observed, together with the return of the enema after 15 ounces had been given, and the now decided vomiting, and above all that there had been no action of the bowels for over a week, notwithstanding the giving of medicines for the purpose, it made the diagnosis of obstruction beyond doubt. If I may say it, I think that the moral to be deduced from this case is to never diagnose a case as simply hysterical, until we have, beyond the possibility of doubt, absolutely excluded hysteria as being due to some obscure cause.—PRACTITIONER.

ALBUMINURIA AND UROTROPINE.

By Dr. Langheld.

A number of eminent investigators have shown that there is a connection between Urotropine medication and the appearance of albuminuria. A satisfactory explanation of this fact, however, seemed to be lacking; although I have studied the literature of the last twenty years. For this reason I felt justified in making trials which are characterized from the following general points of view:—

The discoveries made during the last fifty years in medicine have shed such light that the majority of us living at the present time, fascinated as we are by their etiological value, have allowed the basis of all knowledge of natural history, viz., biogenesis, to recede too far in the background; and yet the whole of the new bacteriology forms only a small part of the older, inexhaustible biology.

With reference to this subject we have to distinguish between (1) Pronephros (head kidney of Balfour and Sedgewick), (2) Mesonephros (primordial kidney), (3) Metanephros.

This fact by itself might prove that the essential function of the kidney consists in what I should like to call "nervose Betriebsleitung" (nerve management), a view which is strengthened by the existing intimate connection (even identity) between them and the sexual organs.

On the strength of this conclusion, which will be clear to all who are conversant with the literature, it occurred to me that as a manifestation of such "nerve management" there has to be regarded the secretion (not filtration) of the urine, which secretion is a stimulation due to the secretory fibres which belong to the sympathetic nervous system.

The theory of filtration, recently discussed again in the Med. Klinik, No. 40, et seq. was not clear to me, for the reason that in respect of the re-absorption, as averred by the author of the paper, quantities are given which are impossible for the kidneys and the circulation. On the other hand, however, one would be neglectful of all biological speculation if an endeavour were made to compromise with regard to so complicated a process—a process which cannot be made to harmonize with the supreme law of every doctrine of evolution, viz., the "lex parsimoniæ."

I find it, furthermore, impossible, in the case of the various forms of albuminuria (taken collectively), to regard as primary cause the intoxication of the membranes (glomeruli, &c.). For unless one were to discard the whole cellular pathology, such an intoxication would give rise to overproduction locally, i.e., ultimately to a tumor. The functional capacity of an organ depends on its viability, which, in its turn, is dependent on its innervation being intact. In my opinion, every form of albuminuria is "au fond" physiological; it becomes pathological characterised according to an ascertained primary cause which may disappear, or to a fatal ending through complications or sequelæ, or to constant but harmless influence on the organism) if it is only conditional on a degenerated nervefunction.

But "exempla docent."

The ordinary daily dose of Urotropine, according to Penzoldt, is 1.5 to 2 grms., administered half in the morning and half in the evening; according to Ziemssen, the dose should cover a threepenny piece, to be taken on an empty stomach in the morning, and, if required, again in the evening. Both authors mention water as the dissolving medium. These doses may be, or are to be (Penzoldt), administered for months, or even for years. Other authors, however, have ascertained that occasionally the use even of doses as aforesaid is followed by the appearance of albuminuria, which "disappears when the employment of the remedy is discontinued."

The first questions to be answered, therefore, were:—

(1). When (i.e., after which dose) does albuminuria appear after the use of Urotropine? (II.) Why does it appear. (III.) How does Urotropine act in the case of already existing albuminuria.

Trials.—Series A.

Case I.—A man in good health, thirty-eight years of age. History was free from abnormal features. He was not given to drink, did not smoke to excess, occupation healthy. Urine was normal. Treatment: In the morning he was given, on an empty stomach 6 grms. of Urotropine dissolved in 250 grms, of ordinary drinking water at room temperature. In the evening the same quantity was taken. Result (the object of the trial had been explained to him): He became somewhat restless through expectation, after taking the first quantity; but after the lapse of about an hour he ate with a good appetite. After about an hour and a half he felt pronounced strangury, recurring every thirty minutes. The quantity of the urine, passed after four hours, amounted to about 1,200 grms.; the quantity of liquid consumed during that time was 300 grms., in the form of coffee with milk. No burning in the bladder was felt. The urine smelt strongly of garlic; its specific gravity had diminished; it was of a lighter colour than usual, and clear. The Esbach test gave no reaction. The mid-day and evening meals consisted of a mixed diet. The quantity of liquid taken was about 300 grms. In the evening 6 grms. of Urotropine dissolved in 250 grms. of water were given. The patient got out of bed three times during the

night; he felt a slight burning in the bladder, and before morning passed about 2,000 grms. of urine, which likewise smelt strongly of garlic, but showed no trace of albumen. There existed general euphory. The pulse was normal. The burning in the bladder disappeared after the consumption of two bottles of soda water.

Case II.—A man, forty years of age. Anamnesis: His father had formerly been an alcoholic. The patient himself had had measles and severe diphtheria (when about twelve years of age). He had successfully been vaccinated three times. He admitted occasional excesses. The urine was normal Treatment: The patient, who was acquainted with the object of the trial, was given for eight days running, in the morning, on an empty stomach, 10 grms. of Urotropine, in 1,000 grms. of water, which was sipped within half an hour Result: The diuresis increased considerably; on the second day burning in the bladder was felt, but disappeared after the consumption of soda water. The urine was found to be free from albumen (Esbach). His appetite and general health were normal.

Case III.—A man, twenty-five years of age, suffering from acute gonorrhœa, was given for twelve days running, in the morning before breakfast, 5 grms. of Urotropine in 500 grms. of water. He was kept in bed, but after five hours light soft diet was given. He passed copious quantities of urine, which up to the third hour smelt strongly of garlic, but did not smell in the afternoon. After the sixth day the discharge had almost disappeared. On the thirteenth day the urine was found to be free from albumen. Up to mid-day the quantity of urine was about 1,800 grms., for the remainder of the day about 2,000 grms. (in eighteen hours). The patient was directed the to apply local irrigations with Urotropine 1: 100 four times daily, and to take daily, in the morning, 3 grms (6 tablets) of Urotropine in 250 grms. of water. After another three weeks the patient called at mid-day, bringing with him the urine (about 900 grms.) passed in the forenoon; it was free from albumen. No trace of gonorrhœa was observed. No relapse occurred after an evening carousal.

Four other patients, whose anamnesis was favourable, were given on an average, for a period of from ten to fifteen days, in the morning, on an empty stomach, 5 grms. of Urotropine. Albumen was never observed: In two instances burning in the bladder was felt; it disappeared, however, after the consumption of soda water. The diuresis was always increased. The general health was good.

TRIALS.—SERIES B.

Case I.—A gentleman, forty-six years of age, a pronounced neurasthenic, always suffering in the spring and autumn from bronchitis accompanied by rheumatism. Anamnesis: His father died of apoplexy, his mother of uterine cancer. He had had measles, scarlet fever, and gonorrhœa; the latter continued for years. His first attack of articular rheumatism took place about ten years ago. The gonorrhœa was said to have disappeared about sixteen years ago. The patient had been married twelve years; no children; his wife was in good health. Present state: There exist strictures, vitium cordis, said to be caused by overdoses of salicylic preparations. Tophi on both hands; the third and fourth fingers on both hands are only partially movable. The urine cloudy, distinctly acid; specific gravity 48·01, uric acid 0·58, urea 4·9; no albumen, no sugar. The microscopic examination showed kidney and bladder epithelia, few leucocytes, many oxalic acid and the uric acid crystals. Treatment: The patient was given in the morning, on an empty stomach, 0·5 grm. of Urotropine dissolved in a claretglassful of soda water. Light diet. In order to be able to supervise the patient he was ordered to keep to his bed, and during a week no other medicament was administered. The urine collected contained on the third day traces, on the fifth day 0·02 per cent. of albumen, which quantity remained constant during the next fourteen days, and disappeared permanently four days after the Urotropine medication was discontinued. The patient underwent typical treatment; nevertheless, he again had an attack of rheumatism in October, and as the urine became turbid, he took Urotropine. The administration of the same dose was followed on the fourth day, when the urine was examined, by the appearance of 0·03 per cent. of albumen.

Case II.—An epileptic lady, thirty-one years of age, virgo. Her mother was neurotic, her father given to drink, a brother was an imbecile, a sister highly hysterical. She had been for a long time under treatment in a home. Her history disclosed the presence of albumen after the attacks. These occurred usually during the menses, and were especially violent during ovulation; they numbered about eight to ten in twenty-four hours. The patient had met with many accidents. When suffering from an attack of influenza she passed turbid, acid, and dark urine, with an offensive odour; quantity, 400 grms. per day. Diuresis was brought about with milk and soda water, and in the morning 1 grm. of Urotropine in 250 grms. of soda water was given. After two days, with copious diuresis and pronounced diaphoresis, about 0·01 per cent. of albumen appeared, which continued during Urotropine medication and permanently disappeared three or four days afterwards.

Case III.—A gentleman, fifty-four years of age, suffering from neurasthenia anh depression. Anamnesis: The patient was the offspring of cousins german. He was of slender build;

In his youth he was always ailing. As signs of degeneration were noticed prominent ears and the shape of the skull, also very bad teeth and scoliosis. All his brothers and sisters were said to be in good health, although highly "nervous" and "somewhat eccentric. Three of his brothers and sisters died of "convulsions due to teething." The patient, who was a total abstainer, took considerable quantities of tea and coffee and smoked about twenty-five to thirty strong cigarettes a day. He stated most positively that he had not take opium or morphia. About thirty years ago he had gonorrhœa. The patient had been married about twenty years, and had two "healthy" children, who, on closer examination, however, proved to be chlorotic, highly hysterical and scoliotic, and had lost almost all their teeth. The state of nutrition was moderate; enterotoptic habitus; the heart, lungs, and liver were too small, the lungs (the apex of the left) affected by a slight catarrh. The pulse was irregular (nicotine, coffee). Chronic constipation. Increased patellar reflex. The patient gave an exact description of all subjective symptoms of tabes. He worked out a list of his ailments, giving reasons thereof; and he had about twelve analyses of urine available, as he was apprehensive of diabetes mellitus. He regularly went to Wiesbaden, Nauheim, and Wildungen. The urine, brought by him (together with an analysis made on the same day) was without importance as regards kidney symptoms; it was thick and turbid, and to clarify to 0·5 grm. of Urotropine in soda water was taken in the morning. He was kept in bed and put on light but nourishing diet. When finding, on the second day, the urine to be clear, the patient felt much better and was amenable to mental influence. An examination of the urine was made privately at the end of the week and disclosed distinct traces of albumen; casts were also observed. After discontinuing the use of Urotropine the albumen disappeared. The patient was still kept in bed and Urotropine was again administered, whereupon the albumen immediately reappeared. His general health was improved, the appetite good. The patient had increased six pounds in weight.

Case IV.—A woman, thirty-four years of age. Anamnesis: Her parents and four brothers and sisters died of tuberculosis, five were living. The patient was always weak and anæmic, and often subject to migraine. When the menses first set in at the age of seventeen and a quarter, she was highly hysterical. In childhood she suffered from chronic bronchitis, constant colds, pronounced bleeding from nose, inflammation of the ear, and measles. She married when twenty-four, and after three miscarriages in the third to fourth month, she had two children who were said to be healthy (her husband, when asked privately, indignantly disclaimed the idea of having had syphilis). The patient was very musical, but always restless; amongst her friends she was looked upon as a good-natured but whimsical person. She was of slender build, very anæmic, with the usual sequelæ and concomitant phenomena. She had "convulsions in the hands, legs, and globe in the throat"—in short, she was highly hysterical. Objectively, fluor albus, irregular pulse, foul tongue. She eructated loudly at will, and during the examination of the lungs (double-sided bronchitis) she had a yawning fit which ended in laughter. The urine, the daily quantity of which was said to amount to two litres, was turbid, cloudly, with a red-brown sediment, slimy, and contained quantities of pus and epithelia. In filtered urine no albumen was observed. With a view of combating the restlessness (a stay in a home being contemplated), the patient was kept in bed and given an effervercent bromide; and on the second day, on an empty stomach, 0·5 grm of Urotropine in a wineglassful of soda water was administered in order to exert an influence on the uropoietic system. On the third day the urine (catheter-drawn by a nurse) was clear, but there were distinct traces of albumen. After discontinuing the use of Urotropine the albumen disappeared.

There are about twenty other similar cases, in all of which hereditary taint, alcoholism, articular rheumatism, scarlet fever, and gonorrhœa come into question as factors in the history. The etiology of the actual disease, however, was almost without any connection with the anamnesis, and, as a rule, simple.

TRIALS.—SERIES C.

Case I—A man, fifty years of age, suffering from diabetes mellitus (5·39 per cent), albumen 0·02 per cent. The diabetes existed about ten years (Carlsbad, Neuenahr), fluctuating between 0·3 and 0·8 per cent. immediately after a cure. The minimum amount of albumen was 0·09 per cent. After treatment for four weeks with a mineral water containing sodium chloride, 1 grm. of Urotropine being added to 750 grms of such water, the urine remained permanently free from albumen.

Case II.—A gentlemen, about sixty years of age, suffering from gouty kidneys. During the attack the amount of albumen was 0·9 per cent; generally it was about 0·05 per cent. The patient was given in the morning 750 grms of mineral water (containing sodium chloride), to which 1·5 grm of Urotropine was added, the consumption of the quantity to take half an hour. After three weeks only traces of albumen were observed, and after two months no albumen at all was seen. Mention must be made especially of the fact that the patient was in the habit of drinking the mineral water in question

for the last twenty years—without the addition of Urotropine, of course.

Case III.—A lady with incipient Bright's disease. There was œdema of the eyes and the ankles. A floating kidney on the right; slight anæmia. Anamnesis: Measles, chicken-pox. Her father died of cancer of the stomach, her mother of consumption. The children were healthy. Amount of albumen, 0·04 per cent. Treatment: Diet; plenty of milk. In the morning, before breakfast, 500 grms. of mineral water (containing sodium chloride), to which 1 grm of Urotropine was added. After three weeks the amount of albumen was 0·01 per cent. After another four weeks there was no trace of albumen. This state—the administration of Urotropine, viz, 0·5 grm in 250 grms of water—being continued, lasted for about three months. Then followed a period of about four months during which the patient stayed in the South without taking any medicament. On her return she was free from complaint; no œdema or albumen. The patient then caught a cold (severe influenza). On the fourth day of the illness blood, pus (red and white blood corpuscles), casts, &c. The amount of albumen was 1·2 per cent. The quantity of urine was 320 grms per twenty-four hours. Pronounced œdema. Diet; plenty of milk. Digitalis and profuse diaphoresis, and in the morning 1 grm. of Urotropine in 250 grms of water was ordered. After fourteen days all alarming symptoms decreased. The amount of albumen was 0·014 per cent.

Case IV.—A workman, thirty-six years of age, who had refused to undergo an operation (tuberculosis of the kidney). From his history it appeared that he was an alcoholic degenerate, and syphilis did not seem to be out of the question. There was 0·6 per cent of albumen. His state and future were clearly explained to him; he would, however, try Urotropine. In eight weeks there were fluctuations in the amount of albumen, its minimum being 0·03 per cent. its maximum 0·48 per cent. Diet In the morning daily 15 grm of Urotropine in 303 grms of water. The patient felt comparatively well, and withdrew from further observation.

To the first question, When does albuminuria appear after the use of Urotropine? I would answer as follows:—

(1) As to the dose, 0·5 grm. per day is sufficient

(2) As to time, the minimum might be from two or three days.

We now pass to the second question, Why does albuminuria appear after the use of Urotropine?

With regard to answering this question I am well aware of the difficulty I have to surmount, all the more so because of the limited scope of this essay, which necessarily affects the description of the cases quoted, However, later on will be published a series of trials and observations of at least 100 cases, on the basis of which I trust critics will arive at my conclusions, viz.:

(1) Urotropine, even if given in very large doses, does not cause an excretion of albumen if the person experimented on is healthy, i.e., if their exists no hereditary taint, viz, degeneration, or no acquired weakness (see Series A).

On the other hand, (2) the use of small doses of Urotropine is followed by the appearance of albuminuria if any one or both hypotheses of No. 1 do not hold good; and the cause, as shown by the briefly described cases of Series B, always is some neurotic degeneration—in the region of the sympathetic nerves. The cause (the lacking capacity of the normal "nerve management"—see introductory remarks) may be three-fold, viz,, either (a) the existing regulating factors (sympathetic nerves) perform their function at intervals, but fail to do so in the case of any increased irritation (convulsive attacks); or (b) the neurotic function has at some previous time been affected and regenerated only so far that even a very slight new insultus is sufficient to cause it to fail (see Cases I. and III., Series B.); or (c) an interruption in the function does not exist as far as demonstration goes (as under a), nor has there occurred any insultus (intoxication, which presumably may have to be regarded as partial or total paralysis) in the region of the renal function (see b); there exists, however, a general disturbance in the nutrition and function of the nerves (too much or too little, too strong or too weak) which needs but a slight additional burden (through Urotropine) to make its appearance.

Assuming the aforesaid remarks to be convincing, we are confronted by the questions, Which characteristic in Urotropine gives rise to albuminuria? and at which place in the organism does its action set in? and, finally, which are the kinds of albumen excreted?

Neither the blood passage nor the central nerve termination comes into question, were it but for the reason that, when working with formaldehyde and its compounds during a number of years for several hours daily, there never—irrespective of transitory phenomena of irritation in the region of the respiratory passages and the eyes—occurs albumen, and because, moreover, in the event of albumen appearing at all when formaldehyde compounds are passed into the vein, the anamnesis furnishes an explanation. Such a central disturbance or change of the condition of the blood would never be unaccompanied by severe phenomena which certainly might not disappear so promptly and uninfluentially.

It only remains to assume that within the kidneys themselves there are sympathetic nerve fibres (secretory fibres) which, under the above-mentioned hypotheses of morbidity, would be affected by passing formaldehyde (be it ever so diluted) to such an extent that they either contract or harden, and thus allow the albumen to pass or to form. I would mention here that researches are now being made regarding the influence exerted by solutions of formaldehyde on the cell, and that, as far as I am able to see at present, it may be possible to show that the vegetable as well as the animal cell is found in a form similar to alcoholic influence, and reacts in both experimental series in a similar manner.

The kind of the excreted albumen had all the characteristics of the albumen and globulin of the plasma.

Closely connected with these considerations is the third question, How does Urotropine act in the case of existing albuminuria, and why does it do so?

The experimental Series C shows in the aforesaid cases (which are but partially and imperfectly described) the decrease and disappearance respectively of the secretion of albumen. In the selected Cases I. and II. of the series gout is etiologically the basis. The influence exerted by formaldehyde thereon has already been established by His, hence it need not be discussed here. Rather more difficult is Case III. and similar cases. One might attempt, perhaps, to give an explanation of this obscure process as follows:—

Should a toxic substance which the organism is endeavouring to excrete get into one or both of the organs in question, the possibility of toxication will be greatest at that spot where the rapidity of the movement is diminished and the connecting substances (membranes, nerve fibres, &c,) are the finest or weakest. The toxic action may consist in an irritating (inflammatory) process, which, if permanent, causes either proliferation or paralysis, and, with that, necrosis. The final result of such forms of action I consider to be the large white or spotted or the so-called contracted kidney.

Now, if at the commencement of the inflammation there takes place permanently a uniform disinfection by formaldehyde (hardening, contraction), which simultaneously renders harmless (dissolves or binds) the still existing causes of the toxication (i.e., the toxic substances themselves), the membrane, the nerve termination, is given an opportunity of doing away with the necrosed substance, i,e., of completely resuming its function. The albumen in the urine, therefore, will disappear. But if the toxigensis exists in an organ in such a manner that only a new insultus (influenza, for example) is needed for it to give rise to functions with a toxic action, and if at the respective moment the blood has not been freed from poison, a toxication (inflammation) naturally must again take plac at the old spot of the kidney—the "locus minoris resistentiæ"—and, as a consequence, albumen must appear. Here I would refer readers to Case III. of the experimental Series C. Should however, in the course of the toxic action a contraction have taken place, i.e., should the existing membranes or nerve fibres already be necrosed to such an extent that the loss in substance is past making up, there can be no question of getting rid of the poison as long as there are scars, which as signs of their living walls part with cell wall substances, i.e., small quantities of albumen, to the stream which irrigates them.

Having now come to the end of this essay, I would yet mention the following:—

The albumen-diminishing influence of Urotropine I have observed in so many cases that it seems to me to be established beyond doubt.

I may not have succeeded in making clear the reason why, more especially so as there might be raised the objection that the secretory (nerve) fibres mentioned (supposed) by me have not yet been seen. To such an objection I may be permitted to reply that in medicine a great number of processes are still unrevealed as regards their evolution (course), but are clear as far as the result is concerned, and that a denial of the occurring of a process cannot be based simply on saying that it has not been or is not seen, but only by proving that such secretory fibres do not exist: and only in the event of such proof being brought I could look upon the foregoing views, crudely stated, as being erroneous.

On the other hand, however, I would not go so far as to attribute as yet a diagnostically valuable character to Urotropine. I am sure that long observation will lead to according to Urotropine a decisive position in case of obscure etiology and lacking anamnesis. But to that end a far more extensive collection of illustrative cases than are available at present is required.

One may say, however, that in Urotropine we possess a valuable preparation that shows a certain uniformity in its frequently differing effects, a uniformity due to the constancy of manufacture.—THE THERAPIST.

CHLOROFORM ANESTHESIA.

By Albert D. Parrott, Kinston, N. C.

In writing this article it is not the author's intention to add anything new to this practically unblazed trial of medical and surgical science but to set forth and emphasize some facts, that if heeded will unquestionably be of service to those who occasionally administer it in obstetrics, minor surgery, &c., and the house surgeon who is called upon every day to give this most useful drug. I was house surgeon to St. Luke's Hospital, Richmond, Va., for a period of twelve months, and during my stay there gave it in over five hundred cases, and saw it given even more than that—with only one fatality—and that a child two and a half years of age. In this case the child had typhoid perforation of nearly thirty-six hours standing, and was hauled on a train nearly 200 miles—consequently was at the time of chloroform administration in a moribund condition, having a general peritonitis, &c. This child died before the peritoneal cavity was entered, but on the operating table. I do not attribute this death in any way due to chloroform, but to exhaustion, toxemia, &c., incident to the long seige of fever. In the administration of this drug only the purest article should be used. Proven by experience Squibbs is of unequalled purity. Before starting the anesthetic, say about half hour, I think it best to give morphia gr. 1/4, especially in alcoholic, plethoric, stout bull-neck individuals, and frightened by hysteric female's. In the event that morphia is not given before hand if the subject after a few inhalations becomes suddenly alarmed boisterous, or has nervous shivers, one cannot do better than administer from 1/4 ro 1 8 morphia, supplemented by atropia gr 100'150. This ha a happy tranqulizing effect, quieting nervous apprehension and stimulating the heart, and materially aiding in its administration. I always give this even if I only have a faint suspicion that the patient is or has been an inebriate. It can do no harm, and in the vast mortality of cases has a most happy effect. Before beginning chloroform for any purpose it is most essential that the alimentary tract is thoroughly cleaned out by purgation. The day before it is to be administered the patient should have a compound cathartic, and of these combinations there is none better than Comp. blue mass pills. About two of these are given the night before and early next morning should be followed by a brisk saline cathartic, such as Epsom, Rochelle salts, Apinta water, &c. I consider this very important, indeed, not only because chloroform may be easier given an operation more easily performed, but the after effects are less baneful.

The patient should never be chloroformed in the operating room, but in an ante room, and the anesthetist should have at least one female assistant and she should stay by his side all the time, never leaving the room for anything. Patient should be in horizontal position, without pillows under head, clothing carefully loosened about neck. There should be no heavy blankets on chest, and should be thoroughly ascertained whether foreign bodies of any kind are in the mouth, such as false teeth, chewing gum, tobacco, &c. Having gotten everything in readiness we are ready to begin the chloroform. Let me say here in the beginning, no patient should be brought to the surgical or third stage of chloroform anesthesia under fifteen minutes. I consider it criminal to get them down in a shorter time. Before going into the technique of its administration I will give its action on the nervous and circulatory systems, they being the ones chiefly concerning us here.

Active or Nervous System.—Chloroform is an excellent instance of the law of dissolution, and also of the well known fact that drugs, which in small doses stimulate any part in large doses often depress it.

Law of Dissolution.—The law of dissolutiou which when stated as it applies in pharmacology is as follows: When a drug affects functions progressing those first affected are the highest in development; that is to say, they are the last acquired by the individual, and the last to appear in the species. The next affected are those next to highest, and so on; till finally the lowest of all from an evolutionary point of view; that is to say, the functions of respiration and circulation are affected. This law is very well exemplified in the case of alcohol, for the first functions to be disordered are those of the intellect, especially the highest, such as judgment and reason; then follow disorders of movement, and finally death from failure of respiration and circulation. The phenomena resulting from the inhalation of chloroform are commonly divided into three stages.

First Stage.—This is, at first, one of general stimulation, the highest functions being the most stimulated, usually unevenly, so that the patient is somewhat incoherent. The imagination is momentarily excited, and he experiences a general feeling of warmth and comfort spreading over the entire body. The mind from the irregular excitation is confused. Sight and hearing are stimulated, he experiences sensations of light and hears noises. The stimulation of these higher functions is very transitory, and he quickly begins to lose consciousness. He may be aware of people around him talking without knowing what they are saying, but soon he sees and hears nothing. Sometimes during the early part of this stage he may laugh or cry. The inability to see and hear is quickly followed by considerable blunting of general sensation. At the same time that these higher functions are being depressed the lower motor functions are excited; he will kick and fight, throwing

his arms and legs, so that much strength may be required to hold him down, and he will shout and talk incoherent nonsense very loudly. Almost coincidently stimulation of the lower centres sets in, the pulse is increased in frequency, and there is a throbbing of the heart and great vessels. The first inhalation or two may produce a chocking sensation and a stoppage of breathing, which is often voluntary; but soon the respirations are increased in frequency. The blood pressure at first rises a little, and the face generally flushed. The pupils usually dilate.

Second Stage.—This is best called that of depression. Some authors call it the stage of excitement, because the excitation of the motor centers may be continued into it. It is important to remember that there is no sharp boundary line between the various stages, they pass insensibly into one another. In this stage the depression of the highest functions continues so that the patient becomes completely unconscious, and he appears to be in a deep sleep. He sees, hears, and feels nothing, hence chloroform is called a general anesthetic. The excitement of the motor function passes into depression and he ceases to shout and struggle. Some of the reflex centers are depressed, so that when the cornea is touched the eye does not shut. The pupil is contracted. The stimulation of the cardiac and respiratory apparatus gives way to depression, the pulse and respiration become less frequent and less strong. The vaso-motor center is depressed, blood pressure falls. As he cannot feel pain and the reflex activity is so lowered that the heart will not be reflexly inhibited by the shock of an operation this is the period at which to operate safely, although I have seen patients that would not breathe until they were stabbed with the knife, and have frequently seen the peritoneal cavity opened, piles clamped and seared with Pqehnis cautry, &c., without the slightest suspicion of shock. This practice cannot be too severely condemned.

Third Stage.—Fortunately; or unfortunately, which ever it may be termed, I have only seen a few cases reach this desperate stage. One I shall never forget made an indellible impression upon me, and stands out as boldly and vividly as if etched upon the hardest steel, especially when I am anesthetizing an aged patient, or one who is an inebriate. The case in question was a middle aged man suffering from gall-stones. The surgeon was doing a cholecystotomy and everything was progressing nicely when suddenly without the slightest warning the patient seemed moribund. Everything possible was done, but all attempts were futile. It was like searching the "Great Beyond" for departed spirits. In this stage there is a total abolition of reflex excitability when the lowest reflex centres of the cord are depressed, so that the patient may pass his urine and feces involuntarily. All muscular tone is abolished, and consequently the muscles are quite flaccid. Some of them, as those of the arm were probably in this condition towards the end of the second stage. The pupil is widely dilated, probably because of commencing asphyxia. If still more chloroform be given the depression of the cardiac, respiratory, and vaso-motor centers continues, the pulse becomes feeble, and the heart finally stops in the diastole. At last not only its central nervous apparatus but its muscular tissue is depressed, so that it will not respond to mechanical stimulation. The respiratory movements become slight and irregular, with very long pauses between them, and as a result the patient is more or less asphyxiated. Blood pressure gradually falls to zero. There has been some dispute as to how chloroform kills, i.e., whether by respiration or circulation. In my own humble opinion its kills by paralyzing the respiratory centres. The recovery from chloroform also illustrates the law of dissolution. The lowest functions, such as muscular tone, are the first to reappear, but the patient does not usually regain his mental equilibrium for hours.

Having dwelt at some length upon the physiological action of chloroform incident to its inhalation, I will now describe the technique of its administration. Never begin chloroform anesthesia without the means of resuscitation close at hand. These consist of hypodermic syringe loaded with strychnia, gr. 1-30, atropine, gr. 1-00, tongue forceps, mouth gag wad of sterile gauze, towels oxygen tank in readiness, and pearls of aryl nitrite. The patients eyes are bound with a towel, neatly and comfortably folded behind the head. The room should be well ventilated, but of course the patient should not be exposed to currents of air. A few drops of chloroform are now poured on the inhaler, (preferably Esmarchis) and held at least eighteen inches from patient's nostrils to begin with and gradually lowered, as the patient acquires a tolerance, and anesthesia progresses. This method is much to be preferred to be old and, I think, extremely barbarous manner of putting the inhaler immediately over the mouth and nostrils. In putting too near at first it is not only very disagreeable, causing strangling, suffocation, and voluntary stoppage of breathing, but the patient is liable to get it too quickly, thereby producing shock and other unpleasant symptoms at the very outset. Go slow, proceed with caution, take fifteen minutes to get your patient "down," and he will most assuredly take the anesthetic alright. His readiness for operative procedure will be noted by his smooth, regular, and at times stertorous breathing, abolished reflexes, and complete muscular relaxation. He is then wheeled into the operating room. At this juncture he should undoubtedly be profoundly anesthetized. In doing an abdominal section for instance, should the patient

not squirm as the knife severs the skin, fascia, &c., it should be withdrawn for a brief period, as this is a sure sign he is getting too much, because cutting the skin is far more painful than separating and cutting muscular tissue and handling and examining viscera. If at any time during the operation his nose, face, or ears grow cold, or lips purple or livid, remove inhaler immediately. In fact I think the general appearance of face a more valuable index to real condition than palpating pulse or noticing respiration, This facial appearance is really a magnified dial plate, giving conditions of both heart and respirations with unquestionable authenticity. The untoward effects are these: coldness of extremities, cyanosis and lividity, weakened, soft, compressible pulse, shallow, labored, irregular respiration, and dilated pupils. This calls for immediate withdrawal of anesthetic, prompt and heroic measures for resuscitation, such as fresh air in abundance, oxygen, strychnia and brandy glonin by hypodermic, and last, but not least, amyl nitrate, which is of undoubted efficacy in stimulating circulation and respiration, and which should at all times be within reach. All operative interference should be indirect at this time, and the patient's head lowered so blood will gravitate to anemic brain and medulla. The anesthetic should be kept up until all operation is finished and sutures inserted, then it may be withdrawn, as then there is nothing to do but tie sutures and put on binder; by this time patient is beginning to arouse himself and show signs of returning consciousness. The patient is now put in warm bed and hot water bottles or bags packed around him. If he has had nor morphia before or during operation it is wise to administer hypodermically from 1/4 te 1/6 with atropia 1-100 gr. immediately after being put to bed. Given at this juncture, by the time chloroform anesthesia is about passed off and consciousness returning, the patient soon drops off into a sweet refreshing sleep under its magic influence.

To summarize then the points I wish especially to emphasize are (1) give morphia and atropia ½ hour before operation to all cases of plethoria, stout, close built individuals, nervous apprehensive females, and inebriates especially; (2) look to mouth for foreign bodies, for false teeth, &c.; (3) have an empty and as far as possible an aseptic alimentary tract; (4) always have patient in horizontal position, and take at least fifteen minutes to get "patient down," and always begin by holding inhaler eighteen inches from nostrils, with towel over eyes; (5) this is more important than all the rest of technique combined; (6) give amyl nitrite, oxygen, strychnia, artificial respiration (Sylvester's preferably) in emergencies. Don't move patient any more than necessary as it provokes vomiting; (7) if morphia hasn't been given before or during operation, give it immediately after putting patient in bed. Give from 1/6 to 1/4 depending upon nature and painfulness of operation.—THE CHARLOTTE MEDICAL JOURNAL.

A CASE OF PROSTATECTOMY.*

BY GEORGE I. MILLER, M.D.

Wolf R., aged 71 years, was admitted to the Jewish Hospital, of Brooklyn, N. Y., on October 10 1907. His early history is that of diseases of childhood. Family history: negative. About 12 years ago he lost part of his eye-sight. He always suffered from lack of appetite and never ate abundantly. At times he partook of food only once or twice daily, but drank tea at frequent intervals during the day. He was chronically constipated, and occasionally had frontal headaches and dizziness.

His present illness dates back to eleven years ago when he suddenly felt that he was unable to pass water. A physician then ordered some medicine which he took with beneficial results, but soon after began to suffer from frequent and painful urination, with pain and sometimes a few drops of blood at the close of the act. There was also distress in the perineum and rectal and vesical tenesmus.

As time passed on and his condition became chronic, the symptoms differed simply in degree. He suffered from nocturnal pollutions, impairment of the sexual function, at times pyuria, and vague neuralgic pains in the pelvis. He was obliged to get up two or three times a night to pass urine.

Two months ago he began to have difficulty in emptying the bladder, tardiness in the onset of the flow of urine, and lack of force, together with a sense of fulness in the bladder, perineum, and rectum, especially during and after stool. Often there was retention and enuresis, so that he had to summon a physician to catheterize him. There was marked and continuous vesical irritability, and after catheterization he felt that some of his urine was still in the bladder which he was unable to expel.

In the week before operation, catheterization became more and more difficult, and was followed by some hemorrhage.

On the night before admission to the hospital, he was suddenly unable to pass any urine, and although an attempt was made at catheterism by two physicians, it was unsuccessful. At this stage, still unable to urinate, he entered the hospital

*Read before the New York Post-Graduate Clinical Society, November 15, 1907.

with a bladder distended up to the level of the umbilicus. His distended bladder was relieved by means of a metal catheter. The urine withdrawn was bloody, and measured 23 ounces.

His temperature on admission to the hospital was 100.2° Fahr.; pulse, 100; respiration, 30.

Physical Examination.—An old man; 107 pounds in weight; 4 ft. 9 in. in height; weak; thin; anemic; with a general, pitiable broken-down state of health. Tongue coated lungs, heart, liver, spleen healthy. Digital examination per rectum revealed a smooth, hard and tender enlargement of both lateral lobes of his prostate to about the size of a big orange.

Urine Examination.—Specific gravity, 1.012. Bloody in color; albumin, a trace; a moderate amount of deposit on standing; leucocytes and pus, a trace; no sugar.

Blood Examination.—Leucocytes, 10,200; polymorphonuclear leucocytes, 77; large mononuclear leucocytes, 2; small mononuclear and trasitional leucocytes, 20; eosinophiles, 1.

Cystoscopic examination was not made.

Owing to the patient's enfeebled, debilitated state and his advanced age, I considered him a poor surgical risk.

I ordered for him:

Strych. sulph, gr. 1/30 every 4 hours.

Urotropin gr. 7½ t.i.d.

Whiskey, 3ss. every 4 hours.

His bladder was irrigated with boric acid solution every six hours.

Operation.—Performed on October 12, 1907. The patient was placed in the lithotomy position and carefully and thorougly narcotized with chloroform and ether, by Dr Kruskal associated by the House Staff, Drs. Wolfort, Lederer and Ronsheim. The usual pre-operative shaving and scrubbing were, of course, matters of routine. The urethra and bladder were thoroughly and repeatedly irrigated with boric acid solution.

A grooved sound was introduced, and a median incision made through the perineum, and the full lenght of the membranous urethra divided. The incision was deepened until the apex of the prostate was reached, blunt dissection being used to give as free exposure as possible. The prostatic urethra was dilated sufficiently to admit a Parker Syms rubber retractor which I introduced in a collapsed state into the bladder.

Its stylet withdrawn, the bulb of the retractor was distended with water by means of a piston syringe. The bulb within the bladder presented a firm shoulder at the bladder neck and when the stem was pulled upon, the lower part of the prostate was brought well within reach.

The fibrous sheath of the prostate was incised with uterine scissors, entered the sheath with my right index finger, and found the line of cleavage. Dr. Ronsheim then introduced his gloved index finger into the rectum and reached the upper part of the prostate which he pressed down.

I commenced at the right and liberated first the left lobe, and next reached the middle and right side of the prostate. When the left lobe had been brought out of the wound, the right lobe seemed to have disappeared. On close examination it proved to have slipped through a rent in the rectum which was caused by the point of the grooved sound and the subsequent active manipulations to reach and enucleate the upper part and right lobe of the prostate. This rectal laceration was closed with a double row of sutures. The bladder was examined and its walls found thickened. There were no stones within it. An ordinary perineal rubber drainage tube, of the calibre of 36 French, was introduced into the bladder and fastened to the upper part of the external wound.

The wound and the space behind the bladder from which the prostate was removed, was finally packed with iodoform gauze.

The bladder drained through the tube entirely and no urine came in contact with the wound itself. An external dressing was applied and the patient put to bed. A long rubber tube was attached to the perineal drain, its distal end submerged in a disinfecting solution, the amount of which was measured, so that tally could be kept with the quantity of urine passed.

Through this tube the bladder was frequently washed by siphonage. The gauze packing was partly removed at the end of 24 hours, and entirely substituted for a smaller piece of gauze after 28 hours.

The drainage tube was removed on the sixth day. As soon as the drainage tube was removed, the patient was allowed to sit up and walk about. During the few days in bed, while the tube was still in, the patient was allowed to turn and sit up in bed, and assume any position which did not interfere with the working of the tube.

From the time, the tube was removed the case was treated exactly as a case of external urethrotomy. The bladder received the necessary cleansing and the wound itself was treated on general surgical principles.

Internally the patient received urotropin, gr. 7½ t.i.d., and strych. sulph. every four hours. Whiskey ℥ss., t.i.d. After the fifth day he was allowed full diet.

The wound was a simple median incision, of a pyramidal shape, with its base to the surface. It was straight and accessible, having no blind pouches, and was absolutely distinct from the bladder and was not contaminated by urine when the tube was in situ; after its removal, the surface was covered with granulations, the cystitis was very much improved, and the danger of infection was partially past. In the first seven days in the institution, his temperature fluctuated between 100° and 103° Farh, after that it was normal. His pulse came down from 110, when he entered the hospital, to 70. Respiration was 30 on admission, and was normal after the first week. He left the hospital cured on Nov. 14, 1907.

Dr. Blatteis, our pathologist, reported the removal specimen to be chronic glandular and interstitial prostatitis.

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Discussion.

Professor Ayres.—Dr. Miller is to be congratulated upon the successful outcome of the tear in the rectum. The difference between the suprapubic and the perineal operations is the danger of tearing the rectum, especially with a prostate such as this.

Professor Pedersem.—I agree with what Dr. Ayers has said about congratulating the operator in this case. In my experience, tears in the rectum do not heal so readily. I have had only one such case; it occurred in a patient on whom I operated last summer. I dissected so close to the rectum that both my associate and I made a careful digital examination of the rectum after the operation to see that the anterior wall was perfectly sound, and we congratulated ourselves that such was the case. About three days after operation when the bowels were moved by enema, a fistula was disclosed. It cannot be said whether the fistula was the result of sloughing, or whether the nurse in giving the enema, had punctured the thin rectal wall with the end of the tube. Two careful attempts to close the fistula by suturing layer upon layer, have failed.

Professor Fuller.—Dr. Miller was very fortunate indeed in being able to get union by first intention in this case. I have never had such an incident myself, but about two years ago a case of this description came under my observation at the City Hospital. Some one had done a prostatectomy and there was quite a large recto-vesical fistula, I tried an operation of which I thought I was the originator, but in which Zimbesi of Lumberg, I found antedated me, that is, to dissect entirely around the rectum, freeing also the rectal wall from the thin prostatic urethra then to rotate the entire rectum so that the urethra and rectal portions of the fistula do not correspond. The rectum is then maintained in this rotated position by sutures. In this case I twisted a little too much, probably 90°, thus producing so much tension that some of my sutures did not hold although my result was not on this account perfect still the patient left hospital much improved. I expect had I only rotated the rectum 45° my sutures would have all held and the result would perhaps have been perfect.

Dr. Miller.—This complication was the fault of the tip of the grooved director which was steadied by one of the house-staff. Once it went through the rectum, in my efforts to reach and enucleate the upper part and right lobe of the prostate, I continued the tear which was alredy started. A double row of sutures closed the laceration, which healed by primary union and without the formation of a fistula between the rectum and perineal wound. The patient has regained full control over his bladder and passes his urine per urethra.

In the Med. Record, p. 843 Dr. Alexander reports a fatal case he operated upon Sept. 30, 1895, in whom a fistula formed between the rectum and the perineal wound.—The Post Graduate

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PRINCIPLES OF SURGERY.

By Stuart McGuire, M.D.

Surgical Tuberculosis—History to Tuberculosis, Frequency and importance of Disease; Experimental Study, Pathology of the Tubercle; Arrest and Extension of the Process.

Tuberculosis is a chronic inflammation caused by a specific micro organism, the bacillus of tuberculosis, and characterized by the formation of nodules or tubercles. Until recently the disease was not of especial interest to surgeons, but it is now one of the most important and interesting subjects in the field of surgical pathology.

History—Laennec, in 1826, first recognized the inoculability of tuberculosis. Vellemin, in 1865, was the first to demonstrate it experimentally by transmitting the disease from man to animals. He infected rabbits with cheesy tissue from a tubercular lung and demonstrated miliary tuberculosis at their autopsy. He stated that phthisis of the lungs was a specific infection due to an infectious agent. Cohnhiem showed that there was a period of incubation after infection before the development of the disease, and added much to the interest of the study of tubercular inflammation by originating the experiment of inoculating the anterior chamber of the eye of an animal and watching the development of

the disease through the transparent cornea. Toussiant, by a long investigation, showed that tubercular material could be transmitted from man to man from animal to animal, reproducing the disease in each instance, while the material itself lost none of its virulency. Klebs, in 1877, was the first to successfully cultivate the microbe of tuberculosis. He also proved that the same organism was found in scrofulous glands, in lupus of the skin and white swelling of the joints, as in tuberculosis of the lungs. It remained for Robert Koch, however, in 1882, to sum up the work of previous years in one masterly communication which forever set aside all skepticism. He showed conclusively that the bacillus of tuberculosis could be found in every tubercular lesion; that it could be isolated and cultivated in suitable media, and finally he produced tuberculosis, de novo, in a healthy animal by inoculation with a pure culture. Up to the time of the publication of Koch's paper, the profession generally did not recognize the existence of tuberculosis except when the disease attacked the lungs. Tuberculosis of the glands, skin, bones, joints and other tissues of the body was classed under the general term scrofula or struma. They were considered to be local manifestations of an "hereditary blight," or "general dyscrasia," or "scrofulous diathesis." Under this vague nomenclature, which was a cloak to cover the ignorance of the day, the treatment for the local, and, therefore, curable, tubercular processes was inefficient. It is now recognized that tuberculosis is tuberculosis, whether of the bone, brain or belly, glands, joints or lungs. The term scrofula has become obsolete, and by radical surgical intervention, the mortality from the disease has been rapidly reduced.

Frequency and Importance.—Wherever man is found, tuberculosis is present as an everthreatening foe. There is scarcely a tissue of the body immune to infection, and its ravages are to be seen on every hand in the hectic flush of the "lunger" or in the shape of disfiguring scars of the neck, bent spines and twisted limbs. It is said that tuberculosis is responsible for 50 per cent. of all human ailments and to be the cause of the death of one out of every seven people who die. The word "consumption" ordinarily suggests an incurable condition which proceeds slowly to a fatal termination, and the public have greater dread of it than perhaps any other malady except cancer. Yet, while this is true, the majority of cases of tuberculosis can be cured if an early diagnosis is made by an intelligent application of rational measures. To secure this result, however, there must be the permanent banishment of the habit of ages—namely, the drugging of symptoms.

Inoculation Tuberculosis.—Vellemin, Cohnheim, Schuller, Koch and others have proved, step by step, that tubercular material, whether phthisical sputum, an emulsion from tubercular nodes, or urine containing the bacillus, can be introduced into the tissues of a lower animal and produce the disease. Fortunately, for science, most of the lower animals, such as the guinea pig, rabit and mouse, readily contract the disease; hence the same difficulty has not been met in experimental inoculation as that which for a long time frustrated the effort to establish the germ of syphilis. While man has not been intentionally used for the purpose of experiment, still numerous cases are on record where he has been accidentally inoculated, giving the opportunity to watch the development of the disease. Laennec nicked himself with a saw in the midst of an autopsy upon a tubercular subject and had the doubtful pleasure of witnessing the development of tuberculosis in his own skin. He subsequently died of phthisis. Senn mentions the case of a girl, a bag sorter, who developed a small sore at the point of inoculation on her thumb, and afterwards had lymphatic infection of the forearm, with the formation of nodules and ulcers which presented unmistakable signs of their tubercular nature. Another author reports the case of a servant girl who fell and broke the spittoon of a phthisical patient, which she was carrying, cut her hands on the broken pieces, and in three weeks showed the development of tubercles. Another interesting case is that of a Jewish rabbi who, although phthisical performed the rite of circumcision after the ceremonial order of the old Jewish ritual. The orthodox operation consists in stopping the bleeding by spitting styptic wine from the mouth on the amputated prepuce. Twelve children were said to have been thus inoculated by the rabbi on this most vulnerable and tender part and several died from the disease—a fate no less tragic than that which befell others who lost their organs.

Pathology.—Tuberculosis, wherever found, is identified by the presence of the tubercle. Hence the tubercle is the foundation of the pathology of the disease. It had been said that the tubercle is to tuberculosis what the chancre is to syphilis—the specific lesion. It is more than this, however, as it is an expression of the effort of nature to control the disease by eliminating or rendering inert the noxious irritant that has been introduced into the body. The presence of the bacillus of tuberculosis in the tissue is an essential condition for the formation of a tubercle. The germ is the smallest pathogenic organism known with the exception of that of septicemia in mice, its length being about one-half the diameter of a red blood corpuscle. It is rod shaped, straight or slightly

curved, having rounded ends, and is usually found in clusters, although it may be found singly when there are few in the specimen. It multiplies usually by fission, although under some conditions it undergoes spore formation. It is very resistant to heat and other germicides, is difficult to cultivate and hard to stain. It will grow on sterilized blood serum and can be colored, with akaline aniline dyes. When stained, unlike other germs, it cannot be bleached by either sulphuric or nitric acid. This makes the bacillus easy to identify. When introduced into the body through an infection atrium, the organism multiplies and produces its characteristic toxins. The tissues rebel as they do against the invasion of any irritant, and there follows the phenomena described as chronic inflammation.

Definition of a Tubercle.—A tubercle is a nodule formed by an aggregation of cells which have been produced by chronic inflammation, the result of the infection of the tissue with the bacillus of tuberculosis. On microscopic examination it is found to be made up of leucocytes, epithelioid cells and giant cells, supported and held in position by a recticulum of connective tissue. Frequently, if treated by the proper staining method, the tubercle bacillus can be identified. We will take up the histological elements individually and then describe them collectively.

1. The leucocyte is merely a white blood cell which has origin from the general circulation. In every case of inflammation there is more or less leucocytosis and an increase in the number of leucocytes in the part. The amount of general and local increase depends upon the acuteness or chronicity of the infection. As tuberculosis is a typical low-grade inflammation, the number of white blood cells in the part is not great, and the leucocyte constitutes comparatively but a small part of the bulk of the tubercle.

2. The Epithelioid Cell is an embryonal or granulation tissue cell, the result of the division of the formative cells of the part. In chronic inflammation the irritation does not kill, but stimulates the formative cells, and as a result there is exaggeration of their physiological function which is proliferation. The epithelioid cell is named from its resemblance to squamous epithelial cells. It is two or three times as large as the leucocyte, granular in appearance, and it makes up a large portion of the bulk of the tubercle.

3. The Gaint Cell is pathologically the most interesting of the three, and there is some question as to its origin. It is about one hundred times larger than the white blood cell, is finely granular and contains a number of nuclei arranged about the periphery of the cell. It is generally believed that the gaint cell is nothing but an overgrown epithelioid cell, its enormous size being due to its failure to undergo division. Well may its sister, the ordinary epithelioid cell, knowing their common parentage, exclaim, "On what meat has this our Cæsar fed, that he has grown so great?"

4. The Reticulum is a fine mesh-work supporting the cells and binding them together. Most authors assume that it is the old connective tissue of the part, pushed asunder by the advance of the new cells.

Arrangement of the Above Elements.—If a tubercle be carefully examined under the microscope, it will be found that the cells are arranged in three layers: First, the external or peripheral layer made up of small round cells, the leucocytes, which have come from the blood; second, the middle layer, made up of epithelioid cells, which compose the greater part of the tubercle. These cells are two or three times the size of the leucocytes and have come from division of the formative cells of the part. Third, the central layer of two or more gaint cells, which are glutinous epithelioid cells, which have devoted nutrition not to propagation, but to corpulency. Ramifying between the cells is seen the delicate recticulum, and scattered between and in the cells, especially near the center, may be detected the tubercle bacilli. There are no blood vessels.

Development of the Tubercle.—The primary tubercle is microscopic in size, but the continuous action of the irritant causes it to enlarge until it becomes macroscropic, perhaps as large as a millet seed. Other tubercles develop near it and coalesce with it until finally the entire tissue is invaded and involved and becomes a solid tubercular mass.

Changes in the Tubercle.

Coagulation necrosis, or the early death of the component cells of the tubercle, distinguishes it from all other granulomata. The causes of this pecularity are the specific action of the bacillus and its toxins and the absence of any direct blood supply, which is a peculiar feature of the tubercle. In other words, coagulation necrosis equals local toxemia plus ischemia. It begins in the center of the tubercle as this is the point first subjected to the poison of the toxins and longest deprived of nutrition from the blood.

Caseation is the conversion of the tubercular tissue into at yellow, cheesy, soft, unctuous mass. For a time cell outlines and nuclei can be distinguished, but they soon become indistinct and disappear, and the whole mass becomes homogeneous, refuses to take stains, and the identity of its component parts is lost.

Tubercular Abscess.—Coagulation necrosis and caseation having taken place, liquefaction of the tissue follows and a circumscribed collection of fluid resembling pus occurs in the tissue. This is called a tubercular or cold abscess. The term is unfortunate, as the fluid is not pus, but merely the liquefied product of retrograde tissue metamorphosis. The use of the terms, tubercular "pus," and tubercular "abscess," as applied to a condition separate and distinct from suppuration, is to be regretted, but there is no escape, as long as custom has thoroughly established them in literature. Senn states: "I believe that it can now be considered a settled fact that the bacillus of tuberculosis is not a pyogenic microbe. • • • The so-called tubercular or cold abscess contains the fluid which resembles pus, but which shows none of its histological elements."

Infectiousness of Tubercular Pus.—When the tubercular area has finally become converted into a full-fledged tubercular abscess, it is difficult, and many say, impossible, to find any bacilli in the pus. This is due to the fact that its nutrition has been exhausted and the germs have died from starvation and intoxication from their own excretions. Yet it is true that while no germs can be found, the fluid is still highly infectious and capable for producing tuberculosis if injected into a guinea pig. It is believed this is due to the presence of spores. The granulations lining the walls of the abscess and the tissue adjacent to it can usually be demonstrated to contain the active organism.

Secondary Infection.—Usually, after a longer or shorter time, the caseous or liquefied tubercular focus becomes secondarily infected with pyogenic microbes. When this takes place there is a conversion of the caseous product into the true pus of an ordinary abscess. Often there is a further complication of the addition of saprophytic organisms. When this occurs, there is a marked change in constitutional symptoms.

Arrest of Tuberculosis.—From the very moment of tubercular infection, and while the pathologic changes above described have been taking place, the defensive forces of nature have been assembling to combat the progress of the disease. An army of leucocytes has been formed and rushed to the seat of conflict. They have been deployed to invest the enemy and form layer after layer around the infected area. If they are able to turn back the advance of the bacteria they finally institute a state of seige and the disease is said to become latent or quiescent. By a process of condensation called fibrosis, this limiting wall is converted into dense cicatricial tissue, through which the fluid portion of the caseous material is absorbed, the solid portion remaining in the fibrous capsule. Calcification may take place and the mass be converted into a nodule of stone-like hardness. The bacilli and their spores are destroyed and the lesion is said to have healed. Occasionally there may later be manifestations of renewed activity of the disease; hence the presence of a quiescent area in the body is always a menace to health, as the bacilli may break forth, become largely disseminated, and give rise to miliary tuberculosis.

Extension of Tuberculosis.—From an initial lesion of infection tuberculosis may extend either locally or systemically. Locally it progresses by continuity or contiguity of tissues, as when tuberculosis involves first the epididymis, then the seminal vesicles, the prostate, the bladder, the ureters and the kidneys. Systemic infection may result, first, by the blood stream, due to a caseating tubercle opening into a vessel, in which case dissemination is usually wide-spread; second, by the lymph stream, as is seen in the downward extention of the disease in the lymph nodes of the neck, following infection of the tonsils; and, third, through other currents of the body, as the bladder becoming infected from a tubercular kidney by the flow of urine, or the intestines becoming involved from the vicious habit of swallowing tubercular sputum. In cases of systemic infection, it is always possible to demonstrate the initial lesion, although undoubtedly it invariably exists. A guinea pig may be fed on tubercular bacilli, develop tuberculosis in the mesenteric nodes, and not show a point of tuberculosis in the alimentary tract. A child may drink infected milk, develop tuberculosis of the mesentery and an autopsy show no lesion in the bowel. A patient may have tubercular adenitis of the neck, due to infection through the mouth, and it may be impossible to find any history or evidence of the portio invasionis.—THE VIRGINIA MEDICAL SEMI-MONTHLY.

A Mirror of Practice.

OBSERVATIONS ON DIAGNOSIS AND TREATMENT OF WHOOPING COUGH.*

BY ST. GEO. T. GRINNAN, M.D.

The whoop, so important for diagnosis in pertussis, is a resounding, crowing, or whistling inspiration, combined with a spasm of the glottis, and separates individual groups of coughing attacks. During violent coughing paroxysms of other diseases we sometimes observe resonant inspirations

* Read before the Richmond Academy of Medicine and Surgery, July 23rd, 1907.

very much like this whoop, but so rarely that the crowing inspiration is the most important diagnostic sign of whooping cough. In many cases the typical whoop is never heard. In some young infants with pertussis there is no whoop at all, but they cough spasmodically. Children with pleurisy or pneumonia do not whoop.

The pink under eyelid is often quite a certain sign of pertussis. The swollen or œdematous condition of the whole face and almost dusky colour are also very diagnostic of this disease. Exposure to infection is an aid to diagnosis in doubtful cases. Hæmorrhages in the mucous membrane, particularly in the conjunctivæ, are not uncommon, but usually occur after the diagnosis has been made. Vomiting on crying and coughing, especially persistent at night, no fever and a negative chest examination are suggestive of pertussis.

It is not easy to exclude irritation of the pneumogastric or recurrent laryngeal nerve caused by enlarged tracheal or bronchial lymph nodes, simple or tubercular. Von Herff found the mucous membrane of the larynx swollen, congested, and the seat of hæmorrhages or superficial ulcers.

A fairly diagnostic feature is a plug of mucus on the posterior laryngeal wall, the removal of which relieves the paroxysm.

Some information of diagnostic value may be obtained from the blood. Dr. S. F. Churchill, of Chicago, has found that in twenty-nine lucocyte counts there was general leucocytosis in all but one case. In thirty-six cases differential counts were made and thirty showed lymphocytosis. The leucocyte count is usually between 15,000 and 25,000, and is greater than that of any other afebrile disease of the respiratory tract. Dr. Churchill has summed up his investigations in regard to the blood, as follows :

(1) A general leucocytosis is present in nearly all cases of pertussis.

(2) In 85 per cent. there is a lymphocytosis.

(3) The lymphocytosis is more frequent in the early or catarrhal stage.

(4) A lymphocytosis is usually found in those conditions which are hard to distinguish from pertussis.

(5 Therefore, the presence of a lymphocytosis in a child with a hard, persistent cough is a factor of great diognostic value.

(6) The child's age must be taken into consideration in estimating the importance of the leucocyte percentage.

In the treatment of whooping cough there should be abundance of fresh air throughout the attack. Older children may go out of doors, except in stromy weather. Children with bronchitis should not go out. In some cases change of climate is beneficial. In unduly prolonged cases it is well to try a change of climate. A sea voyage is frequently beneficial. In a certain number of cases a residence at the sea shore is followed by marked improvment. The warm southern seashore is usually more beneficial than the cold northern seashore.

Koplik recommends pine woods and moderately high altitudes as more favourable than low land.

There should be two rooms, and the child should be changed from one room to the other three times a week. This gives an opportunity to disinfect the empty room three times a week with a formalin lamp. The bedding should also be changed to prevent re-infection. Very great care should be given to the feeding, particularly in very young infants and in chronic indigestion. In this way vomiting may be avoided. Milk is the best diet, and in many cases the child will do better if the milk is peptonized. In severe cases alcohol may be used.

Any medication which disturbs the stomach should be omitted, owing to the fact, I have found, that homœopathy has the reputation among the laity of being superior to the regular school in the treatment of pertussis.

Holt points out that he has never seen any benefit from insufflation of the various powders in the nose, throat, or larynx. Solutions used as a spray have been found to be of some benefit. Most authors prefer carbolic acid or resorcin in 1 per cent. solution. Solutions are of more benefit than powders. Inhalations have met with more general approval than either powders or solutions used locally. Ointments are hardly as good as either sprays or inhalations.

Of the various preparations to be inhaled, creosote is the best. The drug may be used in a respirator or vapourized over an alcohol lamp. Carbolic acid and cresolin are also inhaled in the same manner.

Dr. Caille recommends ozone, but the remedy is expensive, and it is not easy to procure the apparatus. Nitrous oxide, 20 parts, and oxygen, 80 parts, have been found beneficial in case of weak heart.

Of the drugs given internally about 40 per cent. of those in our materia medica are in use. As pointed out by Holt, the four drugs from which greatest benefit has been derived are antipyrin, quinine, belladonna, and bromoform. Of these four, probably antipyrin heads the list. A child six months old can take 1 gr. of antipyrin every six hours. The drug can be given in relatively large doses. In cases of pneumonia, anti-

pyrin should be discontinued. A combination of antipyrin and digitalis does very well. Bromide of soda is often used with antipyrin.

Quinine is not to be used for very young infants, as it is apt to disturb the stomach. Twelve or 15 grs. must be given daily. It is an excellent remedy for those who can take it.

Belladonna has been largely used, and with a marked degree of success. In using belladonna begin with small doses and increase both the size and frequency of the dose. To an infant eighteen months old one-fourth of a minim of the fluid extract may be given every four hours. If atropin is used, gr. $\frac{1}{3000}$ may be given in the same way. Some authors regard belladonna as the best drug for the treatment of pertussis. Koplik says that belladonna has not impressed him favourably as the dryness of the throat which the drug causes may aggravate the cough.

Bromoform has marked value, but must be used with caution. Koplik says he considers bromoform dangerous and of questionable utility. Bromoform should not be used for very young children. When used, it may be given in an emulsion, or probably a better method is to drop it on sugar. The dose at two years is from 1 to 3 drops from three to five times a day. When giving bromoform in an emulsion, a shake label should always be put on the bottle, as there is danger of getting the greater part of the drug in the last few doses.

Chloroform may be used to ward off convulsions, or to prevent asphyxia. Intubation tubes have done good service in some cases—the rubber tube is the most popular. Vaccination and the diphtheria serum are of doubtful utility. Dr. Anders, of Philadelphia, recommends a mosquito net to prevent draught.

It may be safely said that no internal medication shortens the attack, but it does diminish the number and severity of the paroxysms. Individuals differ very much in the way in which different drugs act on them.

Some three or four years ago, Dr. Theron Wendel Kilmer, of New York, introduced quite a novel mechanical appliance for the prevention of the spasm and cough in pertussis, in the form of an abdominal belt. In infants, a belt four to five inches wide (children five to eight inches wide) is fastened around the abdomen. A slight degree of constriction is sufficient to produce moderation of the cough. Dr. Kilmer has produced very interesting statistics on the treatment by the abdominal belt. Reports from other sources confirm the undoubted value of an abdominal binder in pertussis. Dr. Kilmer says that 95 per cent. of those cases who used the belt were benefited, not only in regard to cough and paroxysm, but especially in regard to vomiting.

Annotations.

BALDNESS.

Prevention through massage exercise is nine points in the law of treatment of baldness. This should be begun in early life, at the time when the youth is developing into the more sober man, when his occipito-frontalis muscle has become more and more subordinated to his will. Massage should be performed the same way as in other regions, first freeing the vessels farthest from the seat of trouble, and gradually approaching the centre. It should be done at night as well as in the morning, particularly at night, as gravity has little, or comparatively little, chance through the day.

HOW TO SWEEP AN INVALID'S ROOM.

We all know how untidy a sick-room becomes, and how annoying the dust of the sweeping is to the patient, "To remedy this," said a trained and capable nurse recently, "I put a little ammonia in a pail of warm water, and with my mop wrung dry as possible go all over the carpet first. This takes up all the dust, and much of the loose dirt. A broom will take what is too large to adhere to the mop, and raise no dust. With my dust-cloth well sprinkled I go over the furniture, and the room is fairly clean."

JAPANESE GIRLS.

In Japan a girl at the age of nine years her hair tied in a red scarf bound around the back of her head; the forehead is left bare, with the exception of a couple of locks, one on each side. When she is of marriageable age she combs her hair forward, and makes it up into the shape of a fan or a butterfly, and at the same time decorates it with silver cord and balls of varied colours. This means everything, and is fully understood by the young men of Japan. A widow who wishes for a second husband puts a tortoiseshell pin horizontally at the back of her head, and twists her hair round it; while an inconsolable widow cuts her hair short and goes in for no adornments of any sort. These last are rare. By these simple means much confusion is avoided.

EFFECT OF LIGHT ON SMALL-POX.

It had long been thought that light had much to do with the severity of the eruption. Experimentation of Finsen, Umia, and others showed that it was not the heat of the sun but the violet rays that caused pigmentation of the skin, and Finsen had suggested that it was only necessary to eliminate the chemical rays of sunlight by the use of red windows or curtains to mitigate the severity of the small-pox eruption. This observer, and others, had reported remarkably good results from this method, the patients passing directly from the vesicular to the stage of convalescence, and no pitting resulting. The speaker said that his own experience with this method was limited to a few cases treated at the Riverside Hospital in 1893. One ward was fitted with red glass windows. The cases were of a mild type, and the experiment was negative in its results.

BABY'S EARS AND EYEBROWS.

Great care and attention must be given to the ears of the new-born baby. They will be small and well set, or coarse and protruding, in after life, according to the care which they receive from birth until the child is six or seven years old. Never under any condition allow them to become crumpled while baby is asleep, and if they show a marked tendency to protrude more than seems natural, a soft mull cap should be tied on during the night. As the child grows older, if the ears still show an inclination to stand out from the head, a good plan is to softly massage them and press them backward at the same time enforcing the nightcap regulation.

However much you may admire earrings, and however fashionable they may be, don't run any risks with your little girl's beauty by allowing her ears to be pierced. Besides the possibility of her ever running the delicacy of those features, the practice is fraught with great danger to health, from blood poisoning, lockjaw, and kindred diseases, and is, moreover, a relic of barbarism.

The eyebrows more than any other feature lend piquancy or otherwise to the face. The ideal eyebrow describes an arch of exactly the same curve as the upper lid itself. The arch will be deepest and heaviest immediately over the middle and taper off to a thin line toward the temple.

CHILD STUDY.

"A great mistake is made by parents; and well-meaning parents, too, by developing the love of the opposite sex altogether too early in life. Children should be children much longer than they are. The child may have had no thought of loving one more than another until special attention was called to one by parents. Then, again, teasing and tormenting them not only develop the affections too early, but drive the children into secrecy and deception, and thereby cause them to take steps they never would have taken if this feeling had remained undisturbed until its proper time of development and its manifestations allowed without criticism."

TOILET POWDERS.

The use of toilet powder may be denied, but be that as it may, it certainly has its advantages. A girl looks tired and sallow, she dusts her face lightly with powder, and wipes it off again; there is a velvety freshness for the time being about her complexion that pleases her, and as her skin is not used to powder she does not look powdered. The next time she is tired she resorts to more powder, and so on. The skin rapidly loses tint and texture, becoming sallow and wrinkled, so that the powder habit, once formed, is well-nigh impossible to leave off. But powder has its uses. To begin with, only the very purest varieties should ever be used, such, for example, as prepared Fuller's earth and starch powder. A red and shiny nose is an abomination. This assuredly may be dusted with fine powder while the trouble lasts, but seek the origin of the red nose and try to cure that. At a dance, too, powder is permissible, and it is sometimes needful in very hot weather. Secondly, unbeautiful spots, too, must at times perforce be hidden. Just apply a little cold cream, wipe this off, and put on a little boracic powder, which is antiseptic and healing at the same time. But, wherever powder is used by day do not fail to wash it off at night.

HICCOUGH.

Hiccough is a spasmodic affection of the diaphragm. Generally a trivial and transient inconvenience, its occurrence in the last stages of acute disease is a grave, often a fatal, symptom, indicative of giving way of the nervous system generally. Continued and obstinate hiccough sometimes occurs in persons, more especially in young females of hysterical tendency, and may continue for weeks without cessation, except during the hours of sleep, in spite of all kinds of treatment. The causes of ordinary hiccough are generally fasting, or some sudden stimulant taken into the stomach, such as highly-seasoned soup; and the affection generally subsides of its own accord. When inconvenient, nothing is so likely to remove it as some active emotion of the mind suddenly excited. The continued sipping and swallowing of cold water, or sucking of ice, and frequent domestic remedies; or anti-spasmodics, such as sal-volatile, may be useful. In the attacks of continued hiccough a medical man should be consulted.

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The Indian Lancet.

CALCUTTA : MONDAY JAN. 27th, 1908.

SUSCEPTIBILITY TO DISEASE.

One of the imposibilities of medicine as a so-called exact science is that the patient is not always responsive to morbific influences in accordance with any set rules. Thus, the two sides of the equation are never balanced in any given case in exactly the same way. All sorts of controlling influences are at work in modifying the generally accepted conditions of cause and effect. There is no such thing as mathematical conclusions in estimating the chances of a positive prognosis in any given case, or in predicating the special action of any particular class of remedies. While we may be well informed as to the laws of disease, the patient himself is the main factor to be taken into account. In the attempt to form an opinion we are governed by the study of the sick one's proclivities, and of his various and complex receptivities of morbific influences. It is the proper appreciation of these qualities which constitute the judicious and careful practitioner as compared with the careless and off-hand prescriber.

We cannot go far in this method of reasoning without considering the important role played by the inherent vital resistance of individuals, not only as regards susceptibility to contagion or infection, but in reference to an equal combative tendency against complications in any given malady. Not only do certain individuals differ from others in hereditary tendencies and in the complex responsiveness to their varied environments, but the same person shows various degrees of resistance at correspondingly different periods. Thus, in early life he has one variety of diseases, and later on others—each in its own time and following certain laws which are now very well understood. It is the stroke of the clock on the mark of the hour. The old-fashioned physician, was not only acquianted with the general constitution of a family, bnt also with the physical peculiarities of its individual members, always worked to advantage in foretelling the probable outcome of the sickness in question.

The probabilities were always in one direction or the other. From many points of view it is a great pity that this kind of knowledge, upon which a prognosis could be most reasonably based, is fast dying out with the growth of specialism and with the fashionable tendencies of patients to be constantly changing medical advisers.

Some of the most interesting facts bearing on hereditary influences have been gathered by tracing the family diseases through different generations in isolated communities. The life insurance companies study the question also on a correspondingly broader and more comprehensive scale, reducing probabilities to almost mathemetical accuracies. Thus, the life-limit fixes the rate of premium for all ages of persons who are apparently in good health at the time the contract of risk is taken. It is necessary to go still further than this if we expect to apply general principles to special physical types. Nordau goes to extremes in generalisations respecting these signs of degeneration. Still, he started rightly, and the facts he obtained in support of his theory are of value as suggestive of a more reasonable plan of study. We are, at least, convinced as to the relation which true physical degeneracy must bear to disease proclivities.

When we adapt general principles to individual cases we must assume, so far as susceptibility to disease is concerned, that the depression of vital force is the first step to that end.

In other words, the system must be prepared for the attack by the lowering of physical tone. Susceptibility in such a sense means temporary weakness. At least this admission appears to explain why, when the various causes of disease are constantly operating, the individual escapes attack until the soil is duly prepared for the seed. We see this fact constantly ex-

emplified in the study of the infectious properties of all the common disease. Pneumonia, typhoid, and tuberculosis serve as apt illustrations of the point in question. In every case the weaker persons are the ready prey for the lurking and ever-ready bacilli. One surgeon, who is over-worked and below par, pricks his finger, and the infection rapidly multiplies itself; another one eliminates the poison as readily as a duck sheds rain. If we could more accurately determine these relative conditions, how much disease and consequent death might be prevented!

Current Medical News.

TOBACCO AND HYGIENE.

A Shield Against Disease.

It is a habit amongst many people to talk glibly about the evils of tobacco, to ascribe to it all manner of diseases, and to assert that its liberal use makes steadily for the deterioration of the human body. All this is very well in its way, although hardly supported by an inquiry into facts, The opportunity may appropriately be taken here to explain the physical constitution of tobacco, The green leaf contains a large percentage of complex organic bodies which retard combustion and emit a most offensive odour when burning. The curing and manufacture of the green leaf into smokable tobacco get rid of or modify these bodies. Excessive fermentation, however, blackens the leaves and produces ammonia compounds. Tobabcco consists largely of mineral constituents which burn into ash of white or greyish colour. In good dry leaf the ash is not excessive in quantity forming from 12 to 20 per cent of the leaf. Reddish ash denotes the presence of iron, and black ash, is due to excess of carbon, resulting in imperfect combustion.

The Qualities Of Nicotine.

Nicotine, the essential characteristic alkaloid, of tobacco, found in no other plant, is colourless and liquid at the ordinary temperature. It is a violent narcotic poison, but is also an antidote to strychnine. It is not present in large quantities in tobacco, forming from 1 to 9 per cent. French and German tobaccos contain the most, which is 9 per cent. It should also be remembered that small as is the percentage of nicotine in tobacco, it is largely consumed and destroyed in the smoke the ratio depending upon the freshness of the combustion. The greater bulk of nicotine is therefore not inhaled. The dark, bitter oils which form in the bowls of pipes are popularly regarded as nicotine, but this idea is entirely erroneous. The oil is really a joint product of the moisture from the tobacco produced by combustion, and impregnated by smoke. It is actually the water of tabacco in combination with the soot and tar of the smoke. Nicotine itself is colourless, and forms an infinitesimal part, less than one ten thousandth part of all the constituents of smoke. The great fact that strenuous anti-smokers seems to loose sight of when preaching the poison of nicotine is that tobacco is smoked and not swallowed. It is all very well for them to give concrete illustrations of the power of nicotine, as has been done in America, when the lecturer administered a grain of the poison to a cat. The cat immediately died, but had the lecturer seen fit to administer a similiar dose of the essence of tea he could have killed ten cats without the remotest trouble. Theine and caffeine, the essential elements of tea and coffee, are more poisonous than tobacco.

Extensive Claims.

The action of course, of tobacco depends entirely upon the individual, the time and the circumstances. Mr. Penn, whose book on. "The Soverane Herb" is a classic amongst smokers, contends that tobacco helps digestion, and assists the healthy action of the intestines. An after break-fast pipe, he says, is better than a dose of salts. He also asserts that tobacco preserves the teeth from decay, and that after an individual has reached the age of thirty years a use of tobacco will prolong life and preserve the mind by lessening the bodily functions of waste and repair. As a prophylactic tobacco is unequalled. It is deadly in action on all germs and batceria. In bacteriological laboratories smoking is forbidden as destructive to the cultivation of bacilli. Some retards the growth of many kinds of microbes, and absolutely destroys many others, such as that of Asiatic cholera. It is worthy of comment that during Great Palgue in London not a single person engaged in the tobacco trade was seized and its prophylatic values led to its general use on medical recommendation.

When cholera was raging throughout Southern Europe in 1885 and people were dying by thousands, not one of the 4,000 women engaged in the National Tobacco Factory at Valencia was attacked. History amply proves, indeed, that tobacco

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properly used is a friend to man rather than the deadly enemy in which character it has been so frequently and luridly protrayed.

PLAGUE IN THE FAR EAST.

The "rat returns," as published by the Hongkong Sanitary Board, disclose a very favourable state of affairs, as far as the infected rats are concerned. In 1905, for instance, from January to July 18,609 rats were caught, of which 937 were found to be infected with plague—roughly about 5 per cent of the rats caught were infected. In the first seven months of 1906 the total number caught was 17,257 and 673 were infected—just under 4 per cet. During the present year 19,552 rats have been caught, but only 20 were discovered to be suffering with plague —about 102 per cent. The difference shown during the past three years is remarkable, and there can be no doubt but that the wholesale destruction of rats has had a beneficial effect upon the Colony. The figures for the past fortnight are :— Victoria, 843 caught, 3 plague infected ; Kowlood, 472 caught, none infected.

IN ANNAM.

The Chinese in the different ports in Annam seem to be suffering from attacks of the bubonic plague, and they seem to be frightened because they are dying without any remedy. They, therefore, have sent back to Canton for able doctors to save the lives of their fellow-countrymen. What hope they have in the success of this scheme does not appear, for experience must have taught them long ere this that when plague comes, their lives are doomed. At any rate, such is the appeal sent to Canton, and there has been a response, and one Dr. Tang has gone down. This response has so delighted those who had undertaken to get medical assistance that the guild, which was responsible for the move, has sent back a cheque for a thousand dollars to the Medical College which was responsible for sending Dr. Tang down. It must be inferred from this that there is a good deal of plague in those parts, and that the Chinese are afraid for their lives. It is not likely, however, that any one doctor will be able to effect anything of importance for them.

HOPE FOR THE DEAF.

There is new hope for the deaf. It is contained in the treatment discovered by Dr. C. J. Heath, Surgeon to the Throat Hospital. Golden Square, who predicts that by its means deafness should well-nigh cease. Dr. Heath first performed his operation on a woman who was suffering for many months from aural discharge, which culminated in acute mastoiditis. As a result of the operation, which is fully described by Dr. Heath the woman rapidly recovered. There is no external disfigurement, no internal sign to indicate that she had had an orperation, or that anything had been amiss with her ear. The extensive damage to the drum membrane has been repaired, and the hearing has been fully resorted. Careful observation of her recovery encouraged other investigations, and thus, little by little, information was obtained which, by the institution last year of an apporpriate operation, has led to the restoration of hearing in over 100 persons." This sudden change in treatment," says Dr. Heath, "is due to the recognition of our ability to restore hearing by the new operation, and implies dissatisfaction with the old radical method (involving the destruction of the drum of the ear), which does not do so. The aural Surgeon to the Stanley Hospital, Liverpool claims for the new operation that not only does it not destroy the drum or jeopardise the hearing but it is also a less severe surgical proceeding than the radical operation. It will, he says, restore hearing in the majority of cases that come under treatment, and, if done early, in practically all. A number of instances of the new treatment is given, some of the patients having been exhibited since their cure.

SIKHS AND ILLICIT DISTILLATION.

If the Sikh does not smoke, he has other virtues. The experiment of attempting to combat illicit distillation in four Sikh districts of the Punjab by selling liquor at a less expensive price than elsewhere, which is the most noteworthy feature of the Punjab Excise administration of last year, has been the subject of a special report, which has been submitted for the orders of the Government of India Meanwhile the Lieutenant Governor observes that one result of the experiment has been to disclose the existence of illicit distillation in these dis-

tricts on a much larger scale than was originally supposed to exist. It would seem that the bulk of the increased revenue derived from excise in the area referred to represents what would have accrued to Government had it been possible to deal with illicit distillation on adequate lines in the past. The price of spirit in these districts has recently been raised with a view to determine more accurately the maximum rate at which it is possible to drive out illicit liquor without stimulating consumption. It is also interesting to learn that in these districts the experiment has been accompanied by a decided decrease in the consumption of charas.

THE MIRAJ MEDICAL MISSION.

One of the largest and most successful medical missions in India is that maintained by the American Presbyterians at Miraj, a native State in the South Mahratta country. Dr. W J. Wanless is the senior doctor in charge. Last year 18000 out-patients and 1,400 in-patient were treated, and 2,000 operations were performed. Three-fourths of the local expenditure is raised locally. The Miraj State has shows its appreciation of the work by building a dharmasala for the convenience of patients, and placing it at the disposal of the Mission. We are told that rents have risen on the side of the town on which the hospital is located, so great is the demand for accommodation. There is also a medical school, where eight young men are receiving a thorough training in both the practice and theory of medicine. Nearly all the buildings of the Miraj Mission are the gift of one public spirited philanthropist in Philadelphia Mr. J H. Converse.

HEAT DISINFECTION FOR PLAGUE.

The various resolutions issued by provincial Governments on the subject of plague bear, as is perphaps only natural they should, a strong family resemblance to one another. A special plague staff is, of course, an important feature of the campagin against the disease, and care is always taken to define clearly their duties. As for measures to be adopted, three invariably figure in all the lists—evacuation, inoculatio and rat destruction, the necessity of securing the co-operation of the people being strongly impressed on all officials. The Punjab Government, in their resolution, would appear to have struck out a new course for itself in recommending a fourth measure to the notice of its officials, that is to say, disinfection by heat. This, it is explained, is a simple expedient, which is believed to be of considerable practical value. The full effects of the measure, it is said, can be secured by merely burning fires on the floors of houses and spreading the hot ashes into every corner of the rooms. The Punjab Government, in order to encourage resort to this remedy, urges the authorities, where necessary, to supply fuel free of charge to those who cannot afford the expense of buying it themselves. Sanitary reconstruction is, of course, likely to prove ultimately the most effective weapon of all in combating plague, and the Punjab Government has fallen into line with all other provincial Governments in drawing the attention of local bodies to their responsibilities in this respect.

SHORT ITEMS.

The Government of Madras have issued rules framed under Section 2 of the Indian Poisons Act for regulating the possession and sale of certain poisons within the limits of all municipalities and cantonments in the Madras Presidency. The necessity for these rules has long been apparent. Although the list does not include all the poisons used in the Presidency it is sufficiently wide to include poisons generally used and hitherto procurable in the bazars in almost unrestricted quantities.

The plague returns for Burma in the year just closed show 863 deaths as compared with 3,692 in the previous year. Two and-a-half lakhs of rupees were expended in the destruction of rats. Danysz virus, by which rats have been exterminated in other towns, is being experimented with but the results are not yet known. There was an increase in the amount spent on plague measures, namely Rs. 4,52,000 as against Rs. 3,65,000 in the previous year.

The subscriptions to the proposed Burma Pasteur Institute have reached beyond the total sum required for starting the foundations. The sum of Rs. 80,000 was needed, whereas, at present, the total subscriptions have reached Rs. 90,113.

The regulation for the prevention of the introduction of plague by sea imposed in the ports of Orissa against vessels arriving from Jedah have been withdrawn.

The plague figures for Rangoon for December 1907 were only seventeen cases, being the lowest since February 1905. the date on which the disease started in Rangoon.

A new hospital for women and children is to be built in Rentachintala. It is to be connected with the very successful hospital of the same kind in Guntur.

Ten cases of cholera have occurred at Mecca and five deaths.

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Current Medical Literature.

MEDICINE.

INFANTILISM, FORMS AND CAUSES OF.

By infantilism is meant a condition resulting from the sum of various diseases acquired in childhood and in puberty. The writer objects to extending this definition further, as others have done, to limit infantilism to a debility, a fraility, and an abnormal smallness of the whole body, and therefore a disturbance of development which affects the whole mass of the body more than it does the individual organs. The author considers that we are justified in speaking of a local partial infantilism. General infantilism is a developmental disturbance, in which the whole organism retains its childish type, and the propagations of the race is provided. The chief characteristics of this form are smallness of the bone skeleton, proportional smallness of the organs, badly developed or undeveloped genital organs, and the persistence of the childish mental capabilities True dwarfs are included in this category. But the degree and complications of this form vary greatly, and so alter the type.

Intrauterine and extrauterine disease of the thyroid gland plays an important part in the genesis of general infantilism. Some authors maintain that all cases of infantilism are due to disturbances of the thyroid, and that inherited syphilis, malaria, alcoholism, tuberculosis, etc., only take a part in the etiology of the condition when the thyroid gland is primarily diseased. But others have found that both in severe and mild forms the thyroid gland may be intact, and the writer agrees with this view.

The elimination of other glandular functions may inhibit and interrupt the bodily and psychical development, as has been shown by veterinary surgeons in the removal of the sexual glands in young animals. A connection between disturbance of the adrenals and the development of the brain has also been proved. Persistence of the thymus is also relatively common in infantilism.

After briefly discussing the action of the internal secretions of the glands and the general action of this secretion on the organism, he sums up that the developmental disturbances of infantilism may be produced by disturbances of the metabolism of very varying origin. Besides this, one has to add local and organic causes of the condition. First, the author speaks of trauma as a local cause in the arrest of development. Severe shock in young people has a very marked effect in this direction. Next he mentions that the determining cause may be a primary disturbance of functions of the brain. The connection between the glands and the brain is a mutual one, and one can make the assertion that the influence of the brain on the glands may be as great as the influence on the muscular system. G. Anton (Munchener medizinische Wochenschrift, July 24, 1906 ; British Medical Journal, September 29, 1906.

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SURGERY.

SHOCK.

Dr. F. W. Parham says that in syncope there is not paralysis but suspension of cardiac and vaso-motor function, due to brain-anemia. Hence, lowering of head, elevation of the rest of the body, and cardiac stimulants are indicated. In collapse there is also suspension of vaso-motor and cardiac function, most frequently from copious external or internal hemorrhage ; the indications, therefore, are the elevation of the extremities and trunk so as to fill the heart with blood from the veins ; cardiac and vaso-motor stimulants, digitalin with nitroglycerine and strychnine to arouse the heart and send the blood to the brain all may be useful. In collapse so long as there is life there is hope. As hemorrhage is so frequently at the bottom of collapse it is all important to find and stop the hemorrhage. Failure to do this would make the stimulant treatment worse than useless, actually harmful, by increase the hemorrhage. Having stopped the hemorrhage, stimulants, auto-infusion, hot saline infusion, recto-clysis, hypodermatoclysis and in an extreme case blood-tranfusion by the method of Carrell, which consists in connecting the artery of the clonor with a vein of the patient might be tried. The patient must then be put to bed with external application of heat and given absolute rest.

It is important to bear in mind that a previous or associated shock proportionately increases the danger, for both shock and hemorrohage attack the integrity of the vaso-motor mechanism, hemorrhage by diminishing its nutrition and the causes of shock by overworking them. The older an operator the more he respects blood and the more careful he is to avoid unnecessary manipulation of sensitive organs.

If the treatment of collapse from hemorrhage be difficult how vastly more complicated is the problem of managing shock. Many cases of shock are so hopeless that once developed all measures are useless and death is inevitable. How important, therefore, to prevent it whenever we can. Here, truly, an ounce of prevention is worth is a pound of cure.

"In surgical practice" says Crile "one of the most difficult problems is to estimate correctly the vital cost of executing a given technic." All the predisposing causes, age, debility from previous disease, actual presence of disease, especially of kidney or heart, diabetes, all must be taken into account in forming our estimate of the probable resisting power of the patient to surgical shock. Here blood loss is of extreme importance. The weaker the patient, from whatever cause, the more careful we must be not to attempt too much. We must not forget that shock results from the exhaustion of over-stimulation, excessive irritation of sensory nerves. We must not add to this exhaustion. There are three ways of avoiding this :

1st. Avoid unnecessary irritative maninpulations, general or local.

2nd. Prevent the sending of impulses to the centers.

3rd. Render the centers less susceptible to irritation.

THE DIAGNOSTIC SIGNIFICANCE AND THERAPEUTIC VALUE OF LUMBAR PUNCTURE IN INFANTILE TUBERCULAR MENINGITIS.

Cozzolino (Riv. di clin. Pediatr) after a study of eleven cases, arrives at the following conclusions : (1) Cytological examination of the cerebrospinal fluid in infantile tubercular meningitis is a useful diagnostic aid, but has not the pathognomonic value attributed to it by Vidal and Ravant. (2) Polynucleosis is not an infrequent occurrence in basic meningitis ; it may be found not only when Koch's bacilli are present (Concetti), but also when they are absent (Comba-Cozzolino) or when they are found in small numbers (Comba) ; in the two latter instances, however, the polynucleosis is much less marked. (3) Polynucleosis being found two to four days before the death of the patient cannot be ascribed to that event as stated by Torday and Berthier. (4) In every case, especially in those where it gives a doubtful or unexpected result, cytological examination must be taken in conjunction with other diagnostic signs, such as the formation and appearance of the reticulum, the quantity of albumin, the presence of substances which reduce copper salts, and inoculation into animals. (5) The force with which the fluid issues has only a relative diagnostic value. (6) Concerning the therapeutic value of lumbar puncture, the author agrees in the main with Concetti and Marfan, that in rare instances only it affords a slight and transient relief to the symptoms. In one of the cases the marked improvement noticed after the fourth puncture must probably be attributed to the tubercular antitoxin injected into the spinal canal. (7) Lumbar puncture is therefore indicated in tubercular meningitis as a diagnostic method in doubtful cases, and although usually harmless, it may at times, as Concetti asserts, hasten the course of the illness to a fatal termination.

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OBSTETRICS.

SIMULATING TUBAL PREGNANCIES.

By Dr. R. Pichevin. The author calls attention to conditions strongly simulating ectopic gestation and leading to errors in diagnosis. These cases occur most frequently in young women who give a history of delay in mensturation. Suddenly they have pain and have a show of blood, ordinarly of little quantity, but continuous and sometimes accompanied with clots.

The coincidence of an abdominal pain with uterine bleeding following a menstural delay, is suggestive of ectopic gestation.

The uterus is not very large, but may be larger than usual as the result of parencymatous metritis.

In certain cases it is crowded upwards and to the front against the symphysis pubis. When due to a pyosalpinx, this condition will be explained by an exudate of periadnexal serous infiltration. Perhaps more frequently the uterus will be more or less fixed in its normal situation. If the patient is bleeding, the cervix, may be slightly soft and the os patent.

In Dougal's sac a soft, elastic tumor is left ; sometimes quite voluminous and extending upwards literally.

The breasts are not enlarged, the areolæ are not pigmented ; Montgomery's tubercles are not visible.

There is neither nausea nor vomiting, although these are seldom marked in ectopic pregnancy. The predominating conditions, in short, are the delay in mensturation and the consecutive bleeding.

With the pain there is no evidence of internal hemorrhage. There is neither syncope, chills nor pallor. On contrary, there usually is fever which may last several days.

The masses in the pelvis strongly simulate hematocele, excepting that palpation may elicit pain. These masses quickly tend to harden. The previous history points to leucorrhea, labor, and especially artifical abortion.

Besides pyosalpinx, normal pregnancy complicated by other conditions may simulate ectopic pregnancy ; also fibroid tumors, ovarian cysts with twisted pedicles and appendicitis.

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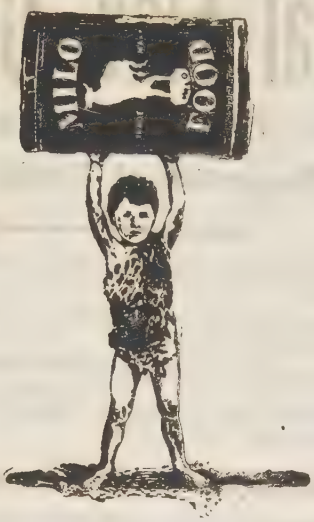

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PATHOLOGY.

THE PRESENT STATUS OF THE ROENTGEN RAYS.

By Arthur Holding, M.D. The X-rays have been in use long enough for us to be able to draw some definite conclusions and state some demonstrated clinical facts; in contradistinction to making theoretical estimates of their value, as has been frequently done in the past.

Gone are the days of expensive experimenting as regards the type of machine to use; the days of dispute between the champions of the coil and the static machine; the days when we were content to listen to the seductive assurances of the electrical salesman followed by the failure of the machine to make good in our hands. Gone are days of an X-rays room crowded with cumbersome appartus; the days of fluorscopic examinations; the days of X-ray burns; the days of 15-20 minute exposures.

To-day the electrical representative can deliver a small powerful coil, X-ray tubes, a compression blende, at the point of your electrical supply, load his plates, make an exposure lasting 15-30 seconds, and give you a radiograph of your patient's hip or kidney region, even though your patient weighs over 200 pounds. The coil that yields a flame, the electrolytic interrupter, the improved Crookes tubes and the compression blende, coupled with experience, have brought the X-rays from a visionary to a practical basis.

The surgeon who to-day says that the X-rays are unnecessary, that his "tactus eruditus" can tell him all that the X-rays could "and more too," has taken his place with those who prefer to judge temperature by the hand rather than by the clinical thermometer, the blood by the pulse, rather than by the microscopical examination; and with the devotees of "laudable pus." The older methods have their value—long may they live—but the newer methods also have their value. To admit the value of one is not to deny the value of the other; long may they live together in the armamentarium of progressive medical profession.

Radiography bears all the ear marks of a clincial laboratory method, i. e., the required instruments are costly and delicate, they require an operator with technique to get satisfactory results, X-rays observations are of clinical value to the general profession their therapeutic value is occasional rather than general, and should not be magnified. Clincial pathology and clinical bacteriology, especially the examination of throat cultures for diphtheria, have been conducted most practically in the public laboratory, accessible to all members of the profession, conducted by competent men, its processes availble for student instruction; and so also will raidography yield more scientific results under similiar surroundings.

The Rœntgen rays are still the X-or unknown rays, although the generally accepted theory is that the wave lengths, of this light are far shorter and their rate of vibration far more rapid than those of ordinary light. These short waves of light are destructive to the human organism, as witnessed by the development of carcinomata, and azoospermia among the X-ray operators. Therefore, to-day, the radiographer avoids all exposure to the rays. This has led to the passing of direct fluoroscopic examination. The injurious effect of these rays on the patient are of little moment when he is only exposed a few times for skiagraphic purposes but nevertheless he should be given every possible protection.

When we remember that the truest of all passions is blind, it is not to be wondered at that "enthusiasm" has sometimes reported a recession of symptoms as a cure, or mayhap, has reported an improved case as cured. I have known of such instances among specialists other than electro-therapeutics. But it is to-day generally known that:

(1) The X-ray causes degeneration of epithelial tissues, especially those of the skin and its appendages.

(2) The X-rays cause endarteritis;

(3) The X-rays cause destruction of lymphatic tissue.

Furthermore the X-rays have proved curative intractible or inoperable cases of tubercular adenitis, pruritus, acne, sycosis, lupus vulgaris, lupus erythematosis, spleno-myelogenous leukæmia, pseudo-leukæmia, and eczema. The rays are a specific cure for epidermoid cancers. While we are not willing to say that the X-rays are a specific cure for all cases of cancer and sarcoma, we must admit that they do have a beneficial effect in cases of malignancy to which the rays can be applied directly. It is our duty to increase this action rather than to deny its presence.

SYPHILITIC CONTAGION FROM TERTIARY LESIONS.

Charles Mallory Williams, in Medical Records, collects from the literature 41 cases in which syhpilitic infection has been received by exposure to the tertiary lesion, thus disproving a widespread belief that tertiary lesions are not contagious. The reason why infection from tertiary lessions is so rare the author ascribes, in the first place, to the fact that tertiary lesions are to much rarer than the secondary. Then, also, their site is not generally so favorable to the spread of the disease, and the gross appearance of the gumma is such as to give warning of danger; and finally tertiary lesions, as a rule, appear at an age when there is less chance of infecting others. The considerable lapse of time between the original infection and the appearance of tertiary lesions is often invoked to explaine the apparent lack of contagiousness of the latter; and though doubtless true in many cases, the author believes it cannot be extended to cover those cases in which typical secondary leisons appear even so late as thirty years after infection.—New York State Journal of Medicine.

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THERAPEUTICS.

TREATMENT OF WHOOPING COUGH.

Kilmer, of New York (Archives of Pediatrics Vol. xxiv. No. 2) describes his method of treating this disease in children by means of an improved abdominal belt, made of linen, with a strip of elastic webbing two inches wide inserted on either side which is sufficient to give elasticity. The belt laces in the back, by means of which any degree of constriction can be maintained. It can be worn over the undershirt. Different widths are used, according to the age of the child: for infants four to five inches wide; for children, from five to eight inches wide. The length of the belt should be such that when complete it would measure three inches less than the circumference of the abdomen at the naval. The degree of constriction should be determined in each case. A slight degree is sufficient to produce a moderation of the cough and cessation of vomiting. Should symptoms not abate after the belt is applied, it should be tightened slightly. Uusually a sense of comfort is expressed by children who are old enough to make themselves understood.—Medical Fortnightly.

TREATMENT OF GASTROPTOSIS.

Dr. Lockwood, of 2000 patients, has found 351 suffering from gastroptosis. The disease runs a typical and characteristic course, and can be divided into stages It begins with subnutrition and nervousuess, and occurs especially in persons with an acute costal angle. In such persons prophylactic treatment should be instituted. In the first stage there is a gastroptosis alone without any symtoms. In second, temporary atony sets in with intermittent symptoms, consisting of gas in the stomach, heartburn, and distress after eating. Later follow permanent atony continous symptoms. Gastritis is not an etiological factor, neither is tight lacing. In fact, a straight-front corset gives support and is of value. Intermittent atony is brought on by mental and physical strain. Fermentation has been proved by the author's experiments not to occur in atonic stomachs, in which food is perfectly digested as a rule. High gastric acidity exists aud prevents fermentation. Distress depends on the amount of gas and quantity of food. Neurasthenia and constipation result. Flushing of the colon will bring away strings of mucus. Diet brings on subnutrition and makes the patient worse. Examination of stomach contents shows a top layer of clear liquid and a lower one of digested food. Inflation is valuable to aid in diagnosis. Treatment of permanent atony involves rest in bed for four weeks with entire absence of worry and of society, and a trained nurse in charge; hot baths and spinal douches, massages, and a very nutritious diet, excluding fruits and red meats, given in six meals a day. Bromide is an indispensable remedy. Under such treatment weight increases, the curvature of the stomach rises, and a cure is complete after six weeks or so. Prophylatic treatment consists of teaching the patient not to undergo strains, mental or physical, and keeping up the general condition.—Medical Record, July 20, 1907.

ATROPINE IN DIABETES INSIPIDUS.

Fontana (Gazz. degli. Osped., May 12, 1907) reports a case of diabetes insipidus in a child aged 4 successfully treated by atropine. Before treatment the child was drinking every quarter of an hour and getting no proper sleep. About 9 liters of fluid were taken in the twenty-four hours; and 7 to 8½ liters of urine of specific, gravity 1002 to 106 was passed. There no albumin, no sugar, and no abnormal elements present in the urine. The skin was very dry and abdomen swollen. On January 11th the atropine treatment was commenced, and continued until March. The drug was given by the mouth in a solution of 1 grain to 10 grams of water. Of this solution 1 drop, increasing to 18 drops per diem, was given daily. The total amount of atropine administered during the course of treatment was 6 grams. No, ill effects were observed beyond a slight skin eruption in the early days. At the end of the treatment the child only drank ½ liters as against 9, and the urine passed only reached 1200 to 1400 cubic centimeters, and the specific gravity increased to 1010 to 1013. The abdominal swelling diminished, and the child put on 500 grams in weight.—British Medical.

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Funds are urgently required

1. For medicines, surgical instruments, bedding, diet and other hospital necessaries.

2. For building a Hospital which, unlike the present building, will be the property of the College. For the "Hospital Building Fund" subscriptions and donations are specially solicited.

Gifts of clothing, bedding, suitable furniture, furnishings, medicines, surgical instruments, microscopes, pathological and other specimens, medical books and medical journals (old or new) for the library, articles of food (suitable for European and Native patients, etc.), will be thankfully received.

The Members of the Medical Profession, in India, are respectfully asked to co-operate and help, as much as lies in their power.

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Correspondence

Audi Alteram Partem.

CAN A CHILD COME INTO THE WORLD IN A TOMB.

To the Editor, The Indian Lancet.

SIR,—There is a newspaper called Kanoj Punch, published in Urdoo, printed at Kanoj. In the issue of the 7th December 1907, it publishes an account of a child, born inside a tomb. The translation of the passage is nearly as follows :—

"A Mohamedan lady named Mussamat Bilakan came from Cawnpore to Lucknow for some religious ceremony connected with the dead. After the ceremony was over in the burial ground, this lady and others, partook of refreshments. Afterwards, this Bilakan, leaned against a newly prepared tomb. She and others heard the cry of a newly-born child. All began to search but could not find the child. They heard the cry, coming from inside the tomb. They inquired of the keeper of the burial ground and he informed them, that the tomb contained the dead body of a pregnant woman who died some three days ago. They opened the tomb, in the presence of the relatives of the dead and found a newly-born child. The child was sent to Lucknow Hospital for nursing etc."

If this be a fact the serious attention of the Government and its medical advisers is invited and if deemed necessary to devise some means of delivering a pregnant woman before burial.

Yours etc.,

S. W. KELKAR.

6th January 1907.

CAPTAIN M'CAY'S EXPERIMENTS.

To the Editor, The Indian Lancet.

SIR,—The investigations which Captain M'Cay I. M. S., has conducted into the effect of quinine sulphate when used in cases of malaria, a summary of the results of which we publish elsewhere, have made it clear that the use of this drug in such cases is highly dangerous, an important factor in the causation of Blackwater Fever. Captain M'Cay has shown that the effect of sulphate in any form upsets for a time the osmotic equilibrium that normally exists between the red blood cells and the plasma in which they float. Blackwater fever may be produced by (1) the injury to the stroma of the red blood corpuices caused by the malarial parasites ; (11) by the presence of an hæmolysin. Either of these causes may be sufficient to produce Blackwater Fever, but they may not be effectual, and Captain M'Cay's experiments have shown that when the latter is the case the administration of sulphates may become precipitating cause by the sudden lowering of the number of inorganic molecules in the plasma—due to the action of sulphate on the inorganic molecule in the plasma, or in other words the system which may be strong enough to fight the malaria parasite or the hæmolysin to the extent of warding off Blackwater Fever, has its powers of resistance so weakened by the administration of sulphates that it then becomes an easy victim. Captain M'Cay further claims to have shown that hydrochloride or acid hydrochloride does not affect the system adversely in the same way as sulphates, and that they rather tend to increase the resisting power of the red blood corpuscles. He therefore urges, taking it as demonstrated that the use of quinine is essential in malaria that the drug should be administered in the form of hydrocloride or acid hydrochloride.

Yours etc.,

E. H.

SICK CHILDREN'S CHRISTMAS AND HOSPITAL FUND.

To the Editor, The Indian Lancet.

SIR,—On behalf of the Ladies' Committee will you kindly permit me through your columns to thank all those who have so liberally responded to our appeal this season. Thanks, the increase in the subscriptions the Sisters in charge of the Fund have been able to carry out the treats this year on a somewhat larger scale. Both the patients and the staffs at the hospitals expressed much gratitude for all that has been done towards the brightening up of their Christmas Season, and for the sick children it has been a time of great delight.

Yours etc.

E. M. MACPERSON.

THE CAUSE OF BLACKWATER FEVER. THE USE OF QUININE SULPHATES.

A DANGEROUS MEDICINE.

TO THE EDITOR, THE INDIAN LANCET.

SIR,—The following preliminary notes on Quinine Sulphate as a factor in the causation of Blackwater fever by Captain D. M'Cay, M.B., I. M. S.

The results obtained from investigations carried out on the hæmolysis of the red blood corpulces seem to have a very important bearing on the supposed action "of Quinine" in causing Blackwater fever.

In health it has been found that the action of sulphates in any form upsets, for a time, the osmotic equilibrium that normally exists between the red blood cells and the plasma in which they float.

In a series of observations on this section of different sulphates —quinine sulphate, magnesium sulphate and dilute sulphuric acid—a very serious decrease was obtained in the total number of inorganic salts of plasma—implying, in turn, a serious decrease in the osmotic tension of the plasma, The red cells being impermeable, no change takes place in the number of their inorganic molecules; but by endosmosis, water passes into them, causes them to swell up and, if the decrease in the plamsa is sufficient, eventually to burst and extrude their hæmoglobin.

In Blackwater fever the hæmolysis is due probably to three factors :—

(i) The injury to the stroma of the red blood corpuscles caused by the malarial parasites.

(ii) The presence of an hæmolysin.

(iii) Administration of sulphates.

(i) and (ii) may be sufficient to produce Blackwater fever, but (iii) may become the precipitating cause when (i) and (ii) are ineffectual, i. e., the sudden lowering of the number of inorganic molecules in the plasma—due to the action of sulphate on the organic salts of the plasma—may become insufficient to produce a difference in pressure between the plasma and the injured red blood corpuscles which those corpuscles cannot withstand and therefore break up,

Further research showed that while sulphates caused a lowering of the resisting power of the red blood corpuscles to hæmolysis, chlorides, on the other hand, caused an increase. In every experiment where quinine hydrochloride (particularly when combined with sodium chloride and acid hydrochloride, dil) was given no fall in the salts of the plasma took place but a well-marked rise.

As malaria is the underlying factor in the cause of Blackwater fever, and, as in order to get rid of that source of danger-quinine must be given, the rational indication both for prophylaxs and treatment—in the light of the results outlined—is to avoid giving sulphates in any form, and to administer quinine in the form of the hydrochloride or acid hydrochloride.

In addition to sulphates large quantities of alkaline carbonates or compounds of alkaline carbonates or compounds of alkalis with vegetable acids, and potassium salts should be avoided. These all tend to lower the number of inorganic molecules in the blood and therefore to bring the red blood corpuscles nearer to their hæmolytic point.

On the other hand, chlorides, quinine, hydrochloride, calcium chloride and sodium chloride have the opposite effect, and therefore tend to increase the resisting power of the red blood corpucles.

The importance of following this line of treatment in districts where Blackwater fever is prevalent is obvious, and it would appear very probable, if it be adhered to, all those cases of Blackwater fever occurring immediately after the administration of quinine sulphate would be prevented.

Yours etc.,
W. G. L.

CARRIERS OF DISEASE.

TO THE EDITOR, THE INDIAN LANCET.

SIR,—The name of the Anti-Rat Society has a quaint sound, but it is a very useful and important work which the organisation just formed in London is undertaking. The object is to destroy such vermin as are responsible for the production or distribution of disease. Sir James Crichton-Browne, who presided over the initial gathering, stated that Dr. Danysz of the Pasteur Institute had produced a bacteriological preparation fatal to the rat genus. The contagion produced by it was capable of rapid dissemination and caused a disease which forced the rats to seek air. The importance of the work is attested by the distinguished names which appear on the executive, and another matter, which strikes the attention is the offer of the Salvation Army to utilise the services of its officers in India and Japan in furtherance of the society's objects. There is little doubt that the general public will be appreciative and ready with support, for most people understand now how serious a part vermin play in the propagation of disease.

Yors etc.,
D. V.

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LADY MINTO'S NURSING ASSOCIATION.

To the Editor, The Indian Lancet.

Sir,—Financially and artistically the concert at the Calcutta Town Hall in aid of Lady Minto's Indian Nursing Association was a gratifying success. The large and brilliant audience included the Viceroy, Lady Minto, the Ladies Elliott and a party from Government House, Sir Andrew and Lady Fraser, the Commander-in-Chief, Sir Francis and Lady Maclean and many other notable personages, while the programme was a character one is not accustomed to associate with amateur effort and included at least one singer of acknowledged reputation. The concert was described as "by the Viceroy's Band assisted by Leading Amateurs." It would have been more correct, perhaps to have said "Leading Amateurs assisted by the Viceroy's Band," but whether the amateurs assisted the Viceroy's Band or the Viceroy's Band assisted the amateurs they managed in combination to produce most excellent results. Herr Buchner, Director of Music to His Excellency, may well be proud of the work done by the orchestra composed of his own band, amateur strings and some instruments from the band of the King's Own. The quality of the playing was surprisingly good in the case of the string instruments and the tone was admirable. But good as was the material with which Herr Buchner had to work it was in any case only a "scratch" orchestra, brought together for this one occasion and the credit of having trained it to such a high standard of performance is one for which he deserves very high praise. The programme of the orchestra was fairly ambitious—Liszt's Preludes, Grieg's "Spring," Kamzak's "Bosnishe Legends" and the overture to "William Tell—" but the performance was in each case most artistic and the personal influence of the conductor in every item was obvious. Liszt's Symphomic Poem was played with equal sympathy and power, nothing could have been more delicate than the playing of Grieg's fascinating little composition or Komzak's lilting dance theme and the "William Tell" overture had exactly the right atomsphere and character throughout, though in parts it was taken perhaps, a little too slowly. There were of course occasion lapses on the part of individuals in regard to time etc., but in the case of such of an excellent "tout ensemble" these little jars, infrequent enough, can be passed over. Altogether this part of the concert was most enjoyable and we should like to think that there will be another opportunity of hearing this orchestra.

For the rest the most popular artiste of the evening was undoubtedly Lady Maud Warender, whose reputation as a singer is well-known. Her beautiful contralto was heard with great effect in Handel's "Dank Sei Dir Herr" with violin obligato by Herr Buchner. Her singing of "Absent Yet Present" as an encore seemed to lack spirit but in her other three contributions to the programme, Hullah's "Three Fishers went Sailing" "Two Eyes of Grey (McGeoch) and "I hid my love in the heart of a rose' (Guy d'Hardelot) were charmingly rendered and the power with which the more vehement passages were sung was most impressive. Mrs. Lawson, whose is already known to Calcutta audiences, sang Ambroise Thomas's beautiful recitative and romance from Mignon with orchestral accompaniment and was loudly encored. Mr. Calderwood gave a fine rendering of Sullivan's "The Sailor's Grave." One of the most attractive things in the programme was the performance of Grieg's interesting concerto in A minor for painforte and orchestra in which Mrs. Woodroffe was the soloist. Both pianist and orchestra performed admirably and were in touch throughout. Mrs. Woodroffe's playing was marked with power and sympathy and her execution was at times quite brilliant.

Yours etc.,

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FIGHT WITH SLEEPING SICKNESS.

To the Editor, The Indian Lancet.

SIR,—Another chapter in the romance of Central Africa is begun now that the Government has adopted the scheme recommended by the Commissioner of Uganda for dealing with the terrible scourge of sleeping sickness in that Protectorate, and that the expenditure of the necessary funds has been authorised by the Treasury. The disease has sorely puzzled students of pathology during the last hundred years, and its weirdness and dreadful fatality invest it with peculiar interest. In a special interview with a "Westminister" representative, a distinguished member of one of the schools of tropical medicine engaged in the work of examining and defining the various disease-germs of the tropics imparted some details of the plan of campaign about to be opened on the shores of Lake Victoria.

"It is much too early as yet," he said, "to talk about the suppression of the disease; but there is certainly room for a lively hope that this result may ultimately be realised. The scheme will involve an expenditure of about £10,000 per annum—no small sum in dealing with the natives of Central Africa. The population of the affected area is now 100,000. It used to be 300,000 but 200,000 have actually died of the disease. We calculate that there are about 20,000 people suffering from the disease to-day, and it is proposed that these shall be taken into segregation camps to undergo the atoxyl treatment, which consists of the administration of a compound of arsenic and one of the benzine dyes. It has the power of driving the parasites from the circulation; it is hoped also to kill them by this means, but in a proportion of instances at any rate, we know that it has not done so. The cure of the 20,000 afflicted natives must, therefore, remain an open question."

"But there is the problem of dealing with the remaining 80,000 healthy natives, who are to be moved inland from the shores of Lake Victoria?"

"That is not so formidable a task as it may appear to those unacquainted with the facts. It is only necessary to move people about two miles inland. The tsetse fly, the carrier of so much disease and death to man and the lower animals, breeds, within fifteen or twenty yards of the edge of the water, and it will follow people for some hundreds of yards, up to a mile or so, beyond which limit the fly-free area is to be found."

"There is to be a complete clearance of vegetation from all landing-stages along the Victoria Nyanza, and fords, ferries, and water-holes are to be similarly treated?"

"That is an essential part of the scheme because the flies can only live where there is thick bush. Shade is essential to their existence. The landing-stages will be cleared of bush to the extreme limit necessary to ensure immunity from the flies, and the area so treated is to be planted with some low-growing plant that will not supply shade, but will ensure the cultivation necessary to keep down the jungle."

"Do you think the sleeping-sickness will be stamped out in Uganda by this means?"

This is a question no one can answer at this stage of our investigation. For it has still to be proved whether or not the disease is endemic. It may be that the direct cause of sleeping sickness, trypanosomes, or minute protozoal organisms, shaped like an elongated spindle, with a long lash or flagellum at one end and a delicate, fin-like swimming membrane running from the attachment of the flagellum to the other end of the spindle, will live on in dogs and horses, whom we know to be affected. It is therefore quite impossible to say whether the drastic remedy now being applied will be so effective as to stamp the disease out entirely.

"It has always to be remembered," was the expert's concluding caution, "that there are 2,400 miles of shore to the Victoria Nyanza, and that the fly can only be exterminated altogether when the jungle itself is destroyed. The process however slow it may be, will certainly be helped forward by the scheme now adopted; for the less risk there is of sleeping-sickness being contracted, the greater will be the inducement for Europeans to enter the country. The scheme for the removal of the whole of the natives from the fly-infested area emanated from the medical officers on the spot, who are linked up with the schools of tropical medicine in London and Liverpool. The work of investigation at these centers during the past few years has been of the most encouraging description; and the future is full of promise in respect to the task of discovering and removing the mysterious disease that infest the Tropics."

Yous etc.,

R. F.

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Reviews of Books.

Diet in Health and Disease. By Julius Friedenwald, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second Revised Edition. Octavo of 728 pages. London. W. B. Saunders Company, 1906.

This excellent book is dedicated to William Osler and is prepared to meet the needs of the general practitioner and the student. It is eminently practical, giving in concise form an account of the different kinds of their composition and uses. It sets fourth the principles of diet in health and disease. It contains many valuable diet lists and recipes which should be of much value to the phyiscian and the nurse.

The work takes up systematically the chemistry and physiology of digestion, the different classes of foods, beverages and stimulants, and the various factors in their bearing on diet. infant feeding receives full attention. The chapters on diet for special conditions and special methods of feeding are of much practical value. The larger part of the work is given up to diet in diseases. Special cures, such as the milk cure, the whey cure, the yolk cure, etc., are considered.

The chapter on the dietetic management of surgical cases, means for rendering the contents of the stomach and intestine amicrobic, previous to operation upon the viscera, are discussed. The chapters on army and navy rations and dietaries in public institutions are full and instructive.

Government Medical Notifications.

INDIA.

The services of Major W. S. P. Rickets, M.B., I.M.S. (Bombay), are placed permanently at the disposal of the Government of Bombay.

Major J. Chaytor-White, M.D., I.M.S., Chief Plague Officer United Provinces, is appointed to be Sanitary Commissioner, United Provinces, sub. pro tem. with effect from the 17th January 1908.

BENGAL.

Captain J. MaC. A. Macmillan, I.M.S., made over charge of the Buxar Central Jail to Captain F. Browne, I.M.S., on the afternoon of the 11th Janury 1908.

Babu Ganesh Chandra Mitra, first grade Assistant Surgeon, Hathwa Dispensary, in the district of Saran, is granted privilege leave for one month, with effect from the 11th November 1907.

Babu Surendra Nath Datta, second grade Assistant Surgeon is appointed, with effect from the 20th November 1907, to act at the Dumraon Raj Dispensary in the district of Shahabad during the absence, on leave, of Senior Assistant Surgeon Babu Hari Das Mitra, or until further orders.

Babu Hari Das Mitra, Senior Assistant Surgeon, Dumraon Raj Dispensary, in the district of Shahabad, is granted privilege leave for three months, with effect from the 20th November 1907

UNITED PROVINCES.

Third class Military Assistant Surgeon T. W. Twells, I.S.M.D., whose services have been placed at the disposal of this Government, to be Deputy Superintendent, Lunatic Asylum, Bareilly.

Lieutenant-Colonel J. Sykes, I.M.S., Civil Surgeon, Bareilly, held visiting medical charge of the Budaun district, in addition to his own duties, vice Lieutenant-Colonel J. K. Close, I.M.S., transferred.

BURMA.

Third Class Military Assistant Surgeon C. G. Taylor relinquished charge of District Special plague duty, Moulmein, Amherst District, on the afternoon of the 8th January 1908 and assumed charge of Special plague duty, Moulmein Town, and duties of the Assistant Port Health Officer, Moulmein, on the forenoon of the 9th January 1908.

Third Grade Civil Assistant Surgeon R. Sivasubramania Aiyar, L.R.C.P. & S. (Edin.), reliquished charge at the General Hospital, Rangoon, on the forenoon of the 6th January 1908 and assumed charge as Assistant Lecturer at the Burma Goverment Medical School, Rangoon, on the forenoon of the same date, vice Assistant Surgeon J. S. Lamech, L. R. C. P. & S.

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ON · 26^TH AUGUST · 1886 · AGED · 88 ·
AND · OF · EMMA · CATHERINE · LYNES ·
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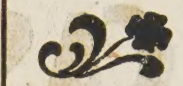

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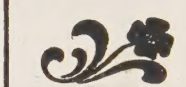

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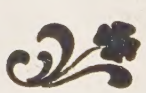

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